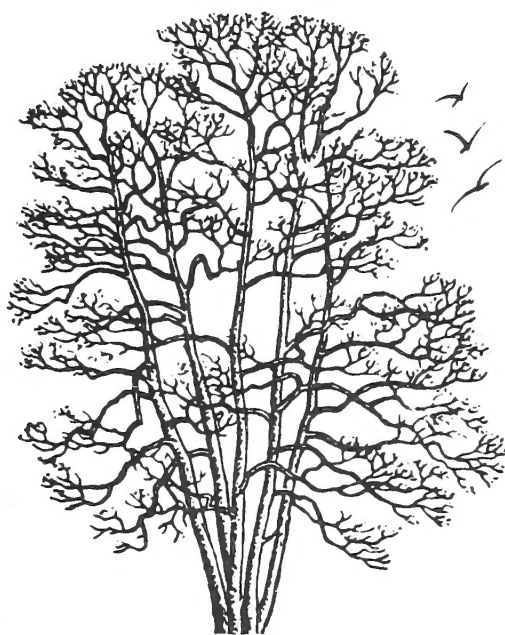


**THE  
EDINBURGH  
NATURAL HISTORY SOCIETY**



**JOURNAL**

**\_1977\_**

# EDINBURGH NATURAL HISTORY SOCIETY

1977

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## EDITORIAL

The Editorial Committee would like to thank all who have sent in a contribution or contributions. Once again the Journal reflects the wide interests of members and the differing depths to which they are followed. It is hoped that all readers, whether professional or amateur naturalists, will find not only a general interest in the contents of the Journal, but also some entry of special significance to their own particular field of study.

Sadly, the aggressive form of the Dutch Elm disease has spread throughout most of Britain. It reached Scotland in 1975 and in the first article Dr. J.C. Sheldon, Ecologist for the Lothian Region, sets out the position in the Lothians at the end of the season 1977. It is a depressing outlook. At the 1978 Members' Evening on 12th April, Dr. Sheldon will be giving practical advice to members on how to recognise the disease and so to help, if only in a small way, to implement control measures.

Throughout 1977 the Society was active. Both indoor meetings and the majority of outings were well attended. We are very grateful to members of other Societies and of Public Bodies who gave of their time and of their knowledge to lead excursions and to lecture. Their names appear on the 1977 programme of excursions on pages 27 and 28.

Details of excursions and full records of animals and plants made on them have been sent to the Records Secretary as it is not possible to print them in their entirety in the Journal. Here special mention must be made of the work of Miss Alice Reddin who during the year acted as liaison between the Excursion Committee and the Journal Committee. She faithfully saw that excursions were properly recorded and the records sent in. A tribute to her memory appears at the end of this Editorial.

The social side of the Society has not been neglected. In addition to meeting together at coffee after each lecture, joining together in informal picnicking groups on excursions and running joint outings with other Societies, on 16th December 1977 a 'Wine and Cheese' party was held at 6 Chamberlain Road through the courtesy of Mrs. E. Farquharson. Over 60 members and friends met together for informal chat and to appreciate the wine-making talents of some of the members. The various wines had been brewed from plant products culled from the countryside and garden.

Our thanks are due to very many members who do so much for the welfare and smooth running of the Society. This year they will not be mentioned by name for they are well-known by their fellow members. We extend our thanks to Gordon Finnie and his associates and also to Mrs. F.J. Anderson for the interest and infinite care which they take in the production of the Journal.

During the year resignations have been received from Mrs. J. Anderson, Miss D.A.H. Gordon, Mr. and Mrs. Robinson, Miss M. Waddell and Miss M.P. Wright.

We record with sorrow the deaths of Mr. P. Campbell and Miss M.W. Friend.

OBITUARY

Members of the Edinburgh Natural History Society learned with deep regret of the death of Alice Reddin on 18th November 1977.

Alice was an active and enthusiastic member of the Society for over 19 years, and gave able and willing assistance on the Council and as a member of the Journal and Excursion Committees. Her keen interest in all branches of Natural History - particularly her love of birds - her kindly help to both young and older members of the Society, and her cheerfulness and fortitude in the face of illness will long be remembered.

In the Society Alice had many friends who will be greatly saddened by her passing. Her death will mean a loss not only to them but to the Society.

M.N.M.  
B.G.

ADDITIONS TO LIBRARY SINCE 1975

Campbell, B.	Bird Watching for Beginners
*Day, J. Wentworth	British Birds of the Wild Places
Fisher, J.	Watching Birds
Lack, D.	The Life of the Robin
Mottram, R.H.	East Anglia
Perry, R.	Lundy - Isle of Puffins
Perry, R.	A Naturalist on Lindisfarne
Perry, R.	Shetland Sanctuary
Smith, S.	How to Study Birds
Mitchell, Walton & Grant (Ed)	Edinburgh Geology, an excursion guide

Field Work Guides

Stokoe, W.J.	Observer's Book of Butterflies
*Heinzel, H., Fitter, R. and Parslow, T.	Birds of Britain and Europe
*Findlay, W.P.K.	Observer's Book of Mushrooms
*Lange, M. and Hora, B.	Collin's Guide to Mushrooms and Toadstools.

*\*gifted by the late Alice Reddin*

NATIONAL MEETING 1978

The National Meeting of Natural History Societies and Naturalists will be held on 15th-17th September at Sheffield Polytechnic with the theme "Urban Natural History". The Conference will begin on Friday evening with a talk by Michael Clegg, Curator of Yorkshire Museum.

A full programme will be included in February 'Habitat'.

# WINTER INDOOR MEETINGS 1977

In January the Society was addressed by Dr. Charles Waterston of the Royal Scottish Museum. With the aid of slides taken over the years on various trips to the islands, Dr. Waterston unravelled for us the complicated geological history of the Hebrides. He took us from the typical landscape of Lewisian gneiss, the oldest rock of all (2200 - 2600 million years old), as seen on Harris-Lewis and South Uist, and the Torridonian sandstone of Handa Island to the Dalradian rocks of Colonsay, Jura and Scarba, the beds of the Jurassic system on Skye and Eigg; the more recent Tertiary volcanic centres (60 million years old) in Skye, Mull, Arran and St Kilda, which had thrown up through the lava flow the granite of the Red Cuillins, the gabbro of the Black Cuillins, the granite of Goat Fell and the great gabbroic ring of St Kilda penetrated by a series of later igneous rocks such as black basalt which could again be seen in the great columns of intrusive sill forming the Shiant Islands.

Dr. Waterston ended his survey with the intriguing information that the opening of the Atlantic, which according to modern Tectonic Plate theory, started between 100 and 200 million years ago, was causing divergence between the continents of 1.18 cm/yr, reckoned with the aid of moon reflectors. One of its present day manifestations was the volcanic activity centred on the Icelandic ridge.

The speaker at the February meeting was Mr. Ronnie Rose, Wildlife Officer for the Economic Forestry Group at Eskdalemuir. The territory on which he worked, said Mr. Rose, was a large block of upland country between the rivers Esk and Dryfe, largely given over to commercial forestry and sheep farming but with a 10 per cent space to develop for the conservation of wildlife in which he had a free hand. Man must manage the artificial situation created by man. It was an area for continuing experiment, observation followed by action.

In his work he aimed to use nature to control nature. The viable commercial woodland had to be protected, so first one had to determine what did most damage to trees. Voles were very destructive, but these are the natural prey of Short-eared Owls and Kestrels so these must be encouraged to breed by: (a) destroying their enemies such as foxes and carrion crows, and (b) providing them with nesting places. Foxes, which prey on game-birds, ground-nesting birds, farmyard fowls and small mammals, including lambs, had to be strictly controlled. Roe Deer had to be managed by the shooting of diseased females, of outcasts from the family groups and of mature bucks when age rendered them toothless. The last provide profitable venison. On the other hand, shrubs were planted to provide browsing in winter, salt-licks were set up in suitable places and small trees such as Cotoneaster, cultivated for the use of bucks removing the velvet from new antlers, and spaces were left in the forest for territorial zones. The upland moors, too high for timber growing, were burned in strips and so made productive of grouse which were culled to keep the population healthy and also to help pay the bills.

There were 97 miles of access roads for staff and, in the quarries which had provided stone for road-building, Foxglove and Rowan had been planted, and nesting-places for Kestrel and sometimes small ponds for duck

provided. A new pond had been created in a frost valley, stocked with trout and willows planted on its edge to feed the caterpillars to feed the fish. Altogether, many species, including the Badger and the Red Squirrel, had returned to the territory because suitable conditions had been contrived.

The biggest threat to South Scotland at the moment was Mink, but the worst predator of all was Man. Britain was a small island with a large human population and there was no longer any truly natural habitat left. What man had changed he must now look after. The ignorant, and particularly the young, must be educated and involved in the conservation and control of wildlife and the countryside. This they were trying to do at Eskdalemuir. In his experience, said Mr. Rose, commercial forestry was making a major contribution to the regeneration of wildlife in this country.

Members' Night was in March this year. A very varied programme of slides was put on - fine flower studies by Mrs. G.M. Wood, birds native and exotic by Mr. G. Reynolds, photogenic fungi by Mr. Brown, foreign flora by Dr. S. Smith, pleasant past occasions by Miss Johnson and an 'odd lot' contributed by various members of the Society in the field. After coffee, the Honorary President, Mr. Gunn, in reminiscent vein, spoke of the many Society bus excursions he had enjoyed and recalled some of them in fine landscape studies.

April brought Mr. Brian Little, the well-known Northumberland ornithologist, to talk to the Society on the birds of that county and to describe some of the work he was doing there. It was a very beautiful county, said Mr. Little, and an excellent one for birds. This he amply illustrated with a comprehensive collection of superb slides taken at various places and times. Starting at Lindisfarne and the Farne Islands, the resting and breeding places of many seabirds, waders and wildfowl, he passed on to a site a little south of Amble where, in a tiny wood near the sea, they had established a ringing station for the many migrant birds, attracted perhaps by the prolifically fruiting bramble and elder bushes, which made a landfall there. Their weights indicated how long they had been on the wing. Some, injured or weak, wintered there. On occasion they had been 'snowed under' by Goldcrests or had a big landfall of Chiffchaffs. Among the exotics recorded through the years were a Red-backed Shrike, a Subalpine Warbler, Ortolan Bunting and Thrush Nightingale, while recently a Barred Warbler and a Wryneck had been regular visitors.

Mr. Little then showed a site in an oakwood west of Newcastle where, because so much hardwood was being felled, they had put up nesting-boxes in which as many as 60 pairs of Pied Flycatcher had nested, also Redstart, Blue Tit, Great Tit and Coal Tit. The attacks of Great Spotted Woodpecker on the boxes had had to be circumvented. In the North Tyne area, soon to be flooded by a reservoir, above the forest were some acres of moorland and here were found the Merlin as well as Sparrowhawk, Kestrel etc. A picture of a Merlin's nest on the ground was shown and a huddle of five young with their blue faces. Crag Lough, near the Roman Wall, marked the southern end of his area for merlin study. There were known to be 35 pairs nesting in Northumberland and the sites were checked in April, May and June.

After the business part of the Annual General Meeting in October, the Society was addressed by Dr. Alistair Sommerville, one of our members,

on the subject 'Insect Life in the Lothians'. In an engrossing lecture, Dr. Sommerville gave us some idea of the teeming insect life that shares our surroundings. He illustrated the different insects sustained by different habitats and described some of their peculiar habits. We must leave some nettles around if we want to see the Peacock and Small Tortoiseshell butterfly in our gardens for that was the food of their larvae. Greenfly, the gardener's pest, provided sustenance for the Ladybird and, on the wing for the Swallow. There was a black moth which tolerated industrial pollution. Among the interesting denizens of the woodland were the caterpillar of the Stick insect which could demolish the foliage of birch trees; the Shieldbug which guarded its few eggs until they hatched; the caterpillar of the Puss moth, found on willow, which could look ferocious if threatened; the Longhorn beetle living inside dead tree trunks.

On grassland the insects had a different way of life again. There were the Horse-fly of the wet places; the Grasshopper whose male sings to attract a female; the Frog-hopper whose bug lives in cuckoo spit and many butterflies and their caterpillars feeding on characteristic flowers, eg the Common Blue on Bird's-foot-trefoil; the Small Copper on Sorrel; the Brown Argus, now very rare in the Lothians but first discovered on Arthur's Seat, on Rockrose; the Grayling which, spending much time on the ground, seeks to conceal itself by tilting its wings to reduce its shadow.

With fresh water were associated the Damselflies and Dragonflies, the Pond Skaters and Water Crickets, Caddis flies and Stoneflies, the Midges and the various Beetles in the debris on the margins. On the hills, where one had patches of trees, grass, bog and heather, one found a whole range of insects surviving in a rather inhospitable habitat - the Antler moth whose caterpillar lives underground; the Heath and Broom moths; the hairy caterpillar of the Northern Eggar whose adult, together with the Emperor moth, flies at incredible speed just above the heather; the dark-green Fritillary butterfly with its courting dance and the solitary bee whose young are preyed on by the larvae of the Oil beetle.

November's meeting took a slightly different form. Mr. Don MacCaskill, well-known for his books and broadcasts, aided by his wife, presented the 'Living Forest' in a set of magnificent slides accompanied by an appropriate commentary. They showed how the ancient Caledonian forest had practically gone and with it most of the old wildlife, but that the new forests, mostly coniferous, growing up all over the Highlands offered cover to many small mammals, insects and birds and their predators. Among the consistently fine studies of the forest's inhabitants, one remembers particularly the pictures of the Red Squirrel on the bare branch of a larch in February sunshine; of the little black Fox cubs; of the clutch of four various-coloured Peregrine eggs; of the female Hen Harrier and Kestrel feeding their young. The programme was rounded off with some enchanting photography of trees and leaves, woods and water, mists and hoar frost, to the accompaniment of appropriate 'mood' music.

In December, we were transported to more exotic parts by Lt. Commander Spragge who, as photographer, had accompanied a Linguistics expedition from the Spanish Department of St Andrews University out to study the language and lore of the South American Indians. From a journey that started at



Georgetown in Guyana and finished in Colombia, via Brazil, Argentina, Patagonia, Chile and Peru, Commander Spragge selected two episodes, firstly the journey from Georgetown to Manaus in the heart of Amazonia and, secondly, a stay in the Altiplano of the Andes at Lake Titicaca and the railway journey on to Cuzco and the valley of the Incas.

Briskly and entertainingly, he gave us his impressions of the country, the climate and the people - the steaming heat of Georgetown, the flight over the barren hill country of Guyana, the bus journey down the often flooded red dust roads, the savannah lands of north Brazil, the peaceful progress by barge down a tributary of the Amazon with the impenetrable, green rainforest slipping by, the vast confluence of two swift-flowing rivers and finally the teeming city of Manaus with its million inhabitants.

In passing, he mentioned the long bus journey from Santiago in Chile to Arica on the border with Peru, along the great pan-American highway with the ocean to the left and the snow peaks of the Andes to the right, the country getting drier and drier as one went north till one reached absolute desert, poor lands that had to support an ever expanding population at mere existence level. From Arica the party travelled overnight by bus from sea level up to 12,000 feet, a journey fraught with hazards mechanical, human and geographical. Arrived at Puno on Lake Titicaca, they recovered from their altitude sickness, visited the reed-dwellers of the lake and saw the women poling their balsa boats and preparing for cooking their naturally frozen dehydrated potatoes. They also saw the Andes Gull scavenging among the dried fish. The market place at Puno was an interesting sight as was also that of a duck sitting on the frozen margin of the lake on cold high-altitude mornings. A village with an old cross and an ancient colonnade was visited and a rather ill-conceived fish farm. From Puno they travelled by train across the Altiplano to Cuzco, seeing the sheep and llama grazing, watched over by the women busy at their spindles. Finally they came to the valley of the Incas.

Commander Spragge illustrated his account with beautiful slides of people and places.

K.P. Wilson

#### DUTCH ELM DISEASE IN THE LOTHIAN

While the aggressive form of Dutch Elm Disease has been in Britain since 1968, this fungal disease was not known to have been introduced into Scotland until 1975. During 1976, the disease was discovered in seven different localities in the Lothians. Only 25 trees were involved and these were promptly destroyed in an attempt to contain the disease. The summer of that year was long and hot and the disease-carrying elm-bark beetle is now known to have gone through two breeding cycles instead of one, as is usual in Scotland. Consequently, the number of beetles carrying the disease rapidly increased and through increased vigilance throughout the summer of 1977, it soon became known that the scale of the disease situation was alarming. Disease outbreaks in over 50 localities were eventually recorded and, by the end of the season, over 400 trees had been condemned.

It is now known that the disease has existed in the Lothians for possibly four years and was probably introduced through the importation of diseased timber from England. The elm-bark beetle has been resident for many years but the introduction of the aggressive fungus which the beetle picks up when breeding on elms that have died of the disease, and the succession of hot summers which have aided the breeding and dispersal of the beetle, have encouraged the disease to spread rapidly from the original disease centres. Consequently, the ecological, landscape and commercial value of the elm in the Lothians, is now at serious risk.

What is probably a conservative estimate of the number of elms in the Region, is given as 350,000 (Good 1976). This is only 5.5 per cent of the total tree population in the Lothians. However, the majority of these are concentrated in pockets such as on the heavily wooded estates, along river valleys and in Edinburgh where it is an extremely important amenity tree.

It is the landscape of the City which is now perhaps at greatest risk. It is estimated that there are over 30,000 elms in the City and these are concentrated in the streets, parks and public gardens where it is the most vital landscape species (Last *et al* 1976). The gardens of the New Town, Princes Street and the Meadows, for example, are dominated by elms and it is these trees which are now threatened with the disease since the largest outbreak of the disease in the Region occurs in a seven-mile belt in the western green belt of the City. This extends from Dalmahoy, through Ratho, Gogar, Turnhouse, Cammo, along the River Almond to Dalmeny and Cramond Village.

While this belt was identified during the early part of the 1977 summer, during August it became obvious that the beetle was flying out, both west and eastwards, creating new outbreaks in West Lothian and also right into Edinburgh. Towards the end of the summer, infected trees were being discovered in the Balerno, Currie, Corstorphine and Barnton areas and as far east as Blackford and, most alarmingly, in the mature New Town gardens where three outbreaks were dealt with.

In the late summer it also became obvious that the disease was established in Midlothian and East Lothian although it is still difficult to determine how these outbreaks arose since their distribution is so wide that no definite pattern exists as it does for the western Edinburgh epidemic. The occurrence of the disease in these previously disease-free districts is disappointing. This is especially so for Midlothian where the elm-bark beetle has been present for a long time and where it is believed the disease could quickly become uncontrollable throughout the countryside.

It must be realised that when the disease has become established in heavily wooded areas, such as those to the west of Edinburgh, it is impossible to control and will thus create problems for many years to come. The disease must be managed to slow the rate of its spread from disease centres but this will be very difficult as the disease-carrying beetle becomes established in new areas. This could make the control of the disease in Edinburgh very difficult since it can be expected that new disease centres may well become established in the woodlands of Corstorphine

Hill, or along the Water of Leith. This may have happened already in the autumn of 1977 with the beetle setting up new breeding sites in these areas.

It is likely that 1978 will be a crucial year in the spread and management of the disease in both the countryside and the City. For this reason, everyone must be vigilant and if an outbreak is suspected, this must be reported to the district or regional disease control officer so that it can be confirmed and control measures implemented. Therefore, if you spot a curling, withering group of leaves high up on an elm, and these begin to die off, changing colour from dull green, deep yellow to brown, which spreads through the tree, it may be a new case of Dutch Elm Disease. Report it immediately, please.

Dr. J.C. Sheldon  
 Authorised Officer -  
 Dutch Elm Disease Control  
 Lothian Region

Tel: 031-299 9292 (Ext 2969)

#### References

Good, J.E.G. (1977). *The status of elm trees in the Lothian Region of Scotland - a preliminary report (unpublished)*.

Last, F.T., Good, J.E.G., Watson, R.H. and Greig, D.A. (1976). *The City of Edinburgh - its stock of trees: a continuing amenity and timber resource. Scottish Forestry 30, 112-126.*

#### TERNs AND THE BIG GULLS

Of the five species of tern that breed in Forth one, the Little Tern, nests only on a few East Lothian shingle beaches. All the others have bred on the islands mainly on Inchmickery and Fidra. The Sandwich Tern is the largest of the four. It nests in dense colonies and its pale eggs are distinctive, so it is easy to census the breeding birds. Arctic, Common and Roseate Terns are all of similar size and their eggs present problems of identification making nest counts more difficult. We often spent but an hour or so at the colonies of terns and it was possible to get only a general picture of the smaller species.

The numbers of Sandwich Terns breeding on Fidra and Inchmickery were probably around 700 pairs from 1959 to 1961, increasing to 1127 pairs in 1962. Then, the following year, there was a 'crash' to only 196 nests. Away from the groups of nesting terns in that year, there were several obvious white-washed areas where birds had taken up territory and had even started to lay before deserting. Obviously there had been much larger numbers of Sandwich Terns earlier with hundreds of pairs deserting the colonies and the Forth just as laying was about to begin.

This tendency to forsake a breeding area is characteristic of Sandwich Tern. Various explanations have been suggested such as food-scarcity and disturbance. As Fidra and Inchmickery are about 30 km apart and both islands were affected, disturbance seems an unlikely reason for a simultaneous desertion from both areas, unless aircraft were responsible.

TABLE 1: Numbers of Sandwich Terns breeding on Fidra and Inchmickery.  
Figures from 1973 are by kind permission of the RSPB.

Year	Fidra	Inchmickery
1959	70	630
1960	?	298
1961	300	353+
1962	519	608
1963	35	161
1964	254	95
1965	38	246
1966	0	315
1967	0	300+
1968	0	405
1969	0	46
1970	201	3
1971	301	0
1972	0	211
1973	0	340
1974	0	450
1975	0	500
1976	0	566
1977	0	580

From 1964 to 1968 between 300 and 400 pairs of Sandwich bred with increasing difficulty. None bred on Fidra from 1966 to 1969 with rats possibly partly responsible. On Inchmickery increasing numbers of breeding Herring Gulls reduced numbers to 46 pairs by 1969 and to three pairs in 1970. Fortunately, the birds were able to shift to Fidra where 200 pairs bred in 1970 and 300 pairs in 1971. However, on this island Herring Gulls were also increasing rapidly and by 1972 had ousted the terns completely. By great good fortune the RSPB had 'culled' the gulls on Inchmickery in that same spring and there was a return of 211 pairs to that island. An annual cull on Inchmickery has since enabled the species to recover and there has been a steady rise to 580 pairs in 1977.

Apart from the absence of any large-scale desertions the history of the Common Tern on the islands parallels that of the Sandwich. There were in the region of 300-350 pairs on Fidra and perhaps 700-800 pairs on Inchmickery in the early 1960s. Now the RSPB counts on Inchmickery show a peak of 777 nests in 1973 falling to 548 in 1977. Since the 1972 abandonment of Fidra due to the presence of Herring Gulls, the species has not attempted to re-colonise the island in spite of regular partial culls of the gulls there in recent years. There is now, of course, a thriving colony at Aberlady but this still suggests a slight decrease from the early 1960s, and a large drop from the situation after the last war when there were 5000-6000 pairs on the Isle of May.

Arctic Terns have hardly ever bred on Inchmickery - we have only one definite record of one pair - but there were around 75 pairs on Fidra in 1959. They have tried to breed there until quite recently when the presence of the increasing Herring Gulls finally forced them off the island. They still nest at Aberlady and might return to Fidra in the future if the gulls are kept under control.

The Roseate is our rarest breeding tern. There used to be 400-500 pairs nesting on Inchmickery and around five pairs on Fidra. As with the Sandwich Tern they declined sadly as the Herring Gulls increased on Inchmickery. By 1969 they were down to 100 pairs with only one to two pairs the following year. However, they had only moved to Fidra with the rest of the terns and 100 pairs bred in 1970 and 1971. By 1972 they were back on Inchmickery but down to 80 pairs. Since then the numbers have fluctuated with a maximum of 100 pairs in 1976 and only 54 pairs in 1977 (RSPB figures). There has been a general decrease in the British population after a peak in the 1960s. As Britain and Ireland hold the bulk of the European breeding population everything possible must be done to reduce disturbance at the nesting areas. For this reason landing on Inchmickery is now prohibited.

The terns may be struggling to maintain their presence on the islands but the same cannot be said of the big gulls. Herring Gulls and, to a smaller extent, Lesser Black-backed Gulls dominate each island, filling the ears and the eyes and the nose with tangible evidence of a gull slum. The third of the breeding big gulls, the Greater Black-backed Gull, has only colonised Forth since the war and only a few pairs breed. Three to four pairs were nesting on the Isle of May when the first gull 'cull' was carried out and the Great Black-backs were wiped out along with thousands of Herring and Lesser Black-backs. On Craigleith a pair has bred since 1968, with two pairs in 1973 and 1977. On the Bass we found a pair with eggs in 1977 so it looks as though the slow spread of the species is continuing.

On our first visit to Inchkeith in 1959 there were at least 12 pairs of Lesser Black-backs and about 18 pairs bred in 1960. By 1977 they had increased to over 300 pairs. Craigleith has always had a good population and we estimated them at 300-350 pairs in 1973, decreasing to around 200 pairs in 1977. Herring Gull counts made during both of these years show a similar drop. One half of the island had 2400 nests (Herring and Lesser Black-back) in 1973 but only 1500 in 1977. Even allowing for a margin of error in counting nests there has obviously been a decrease of the order of a third in the numbers of both species. One possible explanation of this rather unexpected decrease is that birds are moving away from a densely populated Craigleith to an area where there is plenty of room for expansion - the Isle of May. There they will be 'mopped-up' by the annual 'cull' designed to keep most of the island free of gulls and allow the once flourishing vegetation to return.

The Herring Gull is by far the most numerous of the three species. It has been increasing in Forth since the beginning of the century (when there were hardly any) and now nests on practically every island in the Forth. When we first visited the islands in 1959 there were good numbers

on the Bass, Craigleith, Lamb and Inchkeith. We found one nest on Inchmickery in 1960 and by 1966 there were 45 nests. In 1959 on Inchcolm there was a single nest but by 1976 they had increased to 400 pairs in spite of the presence of Black Rats on the island which effectively prevents all but a very few chicks from fledging. Fidra had 20 pairs in 1959 and 500 pairs by 1976. Inchgarvie had two pairs in 1962 and 100 by 1975.

These tremendous increases affect some of the other breeding species. Eider seem to flourish in a gull colony although some eggs and large numbers of small chicks are predated by the gulls. Terns, on the other hand, will not attempt to take up territory within around 10 metres of breeding Herring or Lesser-black Gulls and are easily displaced from traditional nesting islands. We would certainly lose all our Sandwich and Roseate Terns if some of these islands were not annually cleared of nesting Herring Gulls. Small ground-nesting birds such as Skylark and Meadow Pipit also suffer as they cannot breed in a dense gull colony.

TABLE 2: Approximate number of breeding pairs of Herring Gulls in the Firth of Forth.

Locality	Year	No. pairs Herring Gull	No. pairs Lesser Black-backed
Bass Rock	1977	200 - 250	10 - 15
Craigleith	1977	3000	c200
Lamb	1977	300 - 350	5
Fidra (before cull)	1977	430	30
Eyebroughty	pre 1970	(200)	?
Inchkeith	1975	4000	350 - 400
Carr Craig	1976	75	0
Inchcolm	1976	400	20
Haystack	1977	70	0
Cow and Calves	1977	2	0
Inchmickery (before cull)	1977	85	c5
Inchgarvie	1976	100	2
Forth Railway Bridge	1976	10	0
TOTAL (excluding May)		c8700	600 - 650
May (after cull)		2000 - 3000	?

Not including the May there may be about 8500-9000 pairs of Herring and 600-650 pairs of Lesser Black-back Gulls breeding on the Forth Islands. If we can improve our counting techniques it should be possible to tabulate any further change in the gull population. Though not the most lovable of birds they play an important part in the ecology of the islands.

R.W.J. Smith

### ECOLOGY OF THE BINGS

Bings lack the romantic associations of Popocatepetl, Vesuvius or even Arthur's Seat, yet these miniature man-made 'volcanoes' are of considerable interest to the ecologist, and parties of students regularly go on pilgrimage to the peak district around Gorebridge.

Many bings are several hundred years old and so were raised without benefit of machinery. Nowadays they assume characteristic outline, with a gentle gradient on one side for the trucks to climb, and a steep drop on the other. Once abandoned, almost any fate may befall them. Some remain bare, their stark shapes attracting the abstract artist; others are flattened; a few have been attacked for the extraction of powdered coal dust (used in power stations) and for material with which to make tennis courts. Occasionally they are planted with birch trees, one has been incorporated in a public park, and those familiar heights beside the Forth Bridge road at Dalmeny have been converted into a sinister looking circular embankment hedged with barbed wire, arc lights and security notices. It has round concrete objects in the centre and appears on the new O.S. map as "Tank Farm".

Plants attempting to colonise the old bings face a hostile environment. To start with, bings have a high metal content and are very low in nitrogen. Moreover, it was the practice to pump washings from the lagoons into the top so that sodden slurry was formed with the whole structure eroding and slipping. Inside, considerable heat is generated causing a wide disparity between the temperature of roots and exposed leaves. Often a bing is hot enough to ignite spontaneously and burn for years, forming areas called fumaroles - burnt pink shale containing lumps of sulphurous clinker which give off sulphur dioxide gas.

Despite all this, mosses and tenacious small plants, such as Pearlworts, can establish themselves, creep over the surface and hold eroding material steady. There is even a flourishing Sphagnum colony on the damp top of one bing. Some plants can get a grip on protruding pieces of clinker on the steep slopes, and in the fumaroles the soil is light so that deep rooting plants - Coltsfoot, Umbellifers, Sow-thistle and appropriately named Fireweed (or Rosebay Willowherb) - will favour it. These strong plants stabilise the bing in the same way that Marram Grass binds a sand dune. Unburned parts are host to a variety of the small annuals of disturbed ground, such as Cudweed, Heartsease and Forget-me-not, as well as to Ling, Bramble and a variety of grasses.

The practice of planting up with birch trees results in fruit-eating birds like finches making a home on the bing, and the seed they drop end up as trees or shrubs - rowan, beech, hawthorn, ash etc. Eventually, a mature woodland comes into being with a rich humous soil and complete with fungi, shade-loving grasses and plants such as Wild Strawberry, Speedwell spp and even the rarer herbs like Common Wintergreen (*Pyrola minor*). Insects come, and Mice and Rabbits and Squirrels. One may even find the tell-tale sign of slender tree trunks frayed by Roe Deer. At that stage only the discerning visitor will notice by the occasional steep black bare patch that all the luxuriant vegetation is growing on that despised feature of the lowland Scottish landscape - an old bing.

R. Begg

### SEWAGE WORKS - A WORTHY ADDITIONAL HABITAT

When asked to describe the main habitat features at Aberlady Bay, I go through the usual list of mudflat, saltmarsh, wet grassland, fresh-water loch, burn, woodland, sand dune and rocky outcrop. But often I miss out a worthy man-made additional habitat - the Gullane Sewage Works.

During migration periods, the regular birdwatchers make a special point of passing the works to search for small migrants in the sea buckthorn and hawthorn bushes planted in an attempt to camouflage the site.

The insect life is an attraction to Warblers, Wagtails and Swallows; and on occasions, Red-backed, Great Grey, and Lesser Grey Shrikes have appeared there.

Virtually every day you will find Starlings, Thrushes, Chaffinches, Herring and Black-headed Gulls, and occasionally hunting over the site Sparrow Hawk, Merlin and Kestrel.

The surrounding posts with wires make useful perches for several species including Cuckoo, Collared Doves, Crows and Linnets. Wheatears, too, are frequently seen on the posts, and for the past few years a pair has bred close by presumably making use of the food source.

The Blue Tits in winter find this works a welcome source of food also, and racing pigeons have taken refuge here presumably mistaking the building for a 'doocot'.

Both Tree and House Sparrows can be seen, and the latter normally attempt to breed in the building. On occasions when the door has been left open, Swallows have popped in to prospect.

But the most interesting pastime is to go small passerine-searching, and with any luck and the correct weather conditions Willow Warbler, Whitethroat, Lesser Whitethroat and Black Redstart can be seen.

The cunning birdwatchers make sure that they are up wind when searching the works; but even they have been known to grin and bear the stench when better light viewing conditions force them down wind to catch an unchallengeable view of rare species.

Russel G. Nisbet  
Nature Reserve Ranger

### THE HERMITAGE OF BRAID

We are most fortunate in Edinburgh in having so many public parks which offer a variety of habitats; and, for ornithologists, one of the most interesting is the Hermitage of Braid.

In every season, there is almost always something attractive to see, especially if one can spare an hour or so at a quiet time, when the paths are free of large and vociferous dogs, and equally vociferous small boys!



For example, in mid-January this year, during a very cold spell after snow, the woods were alive with hundreds of brightly-coloured Bramblings, feeding among the tree roots, while a few Redwings also took advantage of the shelter. A Dipper bobbed his way up the Braid Burn, and a flash of red and blue marked the swift passage of a Kingfisher. Towards the end of January, most of the Bramblings had gone, and a thaw had set in, but there were now three Dippers, some beautiful Bullfinches, and a party of lively Long-tailed Tits flitting from branch to branch. In March, a Kestrel was to be seen hunting round the back of Blackford Hill; Great, Blue and Coal Tits were calling; and a Magpie flew by the pond. By April, although it was at times still very cold, nesting had begun, and a much larger variety of birds was observed - 25 species on one short walk. It was interesting to see a melanistic Blackbird near the West gate, with a white collar reminding one of a ring ouzel.

Later that month, grey Wagtails were prospecting to find nest sites, as were Tree Creepers. A Green Woodpecker was 'yaffling' loudly, while a Stonechat perched and scolded on a bush near the East gate, and a flock of Goldfinches twittered in the higher trees.

By May, some spring migrants had arrived - Willow Warblers were calling softly, Spotted Flycatchers darted suddenly from the branches, and a Blackcap was feeding very near the main path. There was a Mallard on the Burn, with a small family of five, while a Great Spotted Woodpecker was seen and heard tapping several times.

As this is written, early summer is past, and birds are more silent, and less easily seen in the thick foliage - but there is still the unending fascination of wondering what will appear next time.

M. Mowat

#### THE INCHCOLM RATS

Mr. R.W.J. Smith performed a valuable service (Journal, Ed Nat Hist Soc 1976) in bringing to the attention of a wide circle of naturalists the existence of a little-known population of black rats on Inchcolm.

Theories about the origins of the colony were set out in Dicksons' "Emeralds Chased in Gold" (1899) - an unfortunate title to an invaluable account of the islands of the Forth. At the present time, however, only speculation, to no advantage, is possible. What is initially of the greatest importance is to determine whether these are indeed true Black Rats or merely melanistic examples of the Brown species.

Through the kindness of the then custodian of the Abbey, Mr. Grubb, and the selfless enthusiasm of Mrs. R.W.J. Smith, a live specimen was collected on 22nd June 1977 and deposited in the Royal Scottish Museum to be preserved as a study skin for any future examination. This specimen is undoubtedly a young male Black Rat (*Rattus rattus* Linn). The pelage is a characteristic black fur with the scattering of extra long shiny black guard hairs which give this species its raggedly delicate appearance. The tail is obviously much longer than the head and body, and the large,

beautiful, translucent ears, when bent forwards, easily reach mid-way along the head. Altogether a much more graceful animal than the Brown *R. norvegicus* and indeed, a most attractive creature.

Inchcolm specimen		The Handbook of British Mammals (H.N. Southern)	
		Male Black Rats	Male Brown Rats
Head and body	175 mm	165 - 228, mean 191 mm	213 - 267, mean 233 mm
Tail	208 mm	185 - 252, mean 219 mm	165 - 229, mean 196 mm
Ear	19 mm		
Hindfoot	35 mm		
Weight	187 g	around 200 g	up to 500 g

Difficulties of water transport at that time prevented a follow-up collection of additional specimens to provide information on population structure and perhaps reveal characteristics which might have a bearing on ancestry. It is hoped to rectify this when circumstances permit.

In the meantime, although one may deprecate the loss of productivity amongst the Herring Gulls and Lesser Black-backs of Inchcolm, my personal view is that there are other places where these birds breed but no other island in the Forth can boast this very rare British mammal. Long may it continue to do so.

A.S. Clarke  
Keeper of Natural History  
Royal Scottish Museum

#### Reference

Southern, H.N. (1964). *The Handbook of British Mammals*. Blackwell.

#### BUTTERFLIES

In A.J. Smith's article on 'Two Butterflies' in the E.N.H.S. Journal (1976) he mentioned several sightings of Orange-tip Butterflies at Ettrick, Selkirk and Earlston. It is therefore of considerable interest to record that T. Boyd saw Orange-tip Butterflies at Peebles on 1st June 1977 and by the Union Canal on 30th May. Now that it has been recorded on the Union Canal it will be interesting to see if it spreads across Scotland. The rich towpath flora includes Garlic Mustard, one of the main food plants of the caterpillars.

Sightings of the Small Pearl-bordered Fritillary were made at Gladhouse Reservoir on 26th June by R.W.J. Smith and at Easter Inch Moss, West Lothian on 28th June by T. Boyd and E.M. Smith. This butterfly is locally common in woodland ridings, on wooded hillsides and also in marshy country. R.W.J. Smith is of the opinion that it did not formerly occur

at Gladhouse but that the planting of woodlands and the stopping of the grazing by sheep round the reservoir have created a suitable habitat. The food plant of the caterpillar of this butterfly is Dog Violet.

At Tynninghame on 31st July, Painted Lady, Dark Green Fritillary, and the six-spot Burnet Moth were seen. This was the first occasion that either of the two latter species has been seen there in over 20 years of being regularly visited by T. Boyd and R.W.J. Smith. The Painted Lady, a regular migrant from North Africa, is recorded practically every year from the coast of East Lothian or one of the Forth Islands off North Berwick. The Dark Green Fritillary is a strong flier and frequents wind-swept hill-sides. We found them difficult to approach and impossible to photograph at Tynninghame but much less wary in the north of Scotland. The six-spot Burnet is an unusual moth in that it is a daytime flier and has clubbed antennae. It is very conspicuous being boldly patterned with black and red and having a metallic sheen. It is a feeble flier and proved to be an excellent photographic model. Its warning colours undoubtedly protect it from predation. E.C. Pelham-Clinton told me it was formerly more widespread in this area but is now a coastal species.

Sightings of Peacock Butterflies, migrants from the Mediterranean, have been fewer this year than last. T. Boyd saw them at Easter Inch Moss on 3rd September and at Balerno on 15th September.

E.M. Smith

### SOME NOTES ON NATURAL HISTORY

#### Notes on dragonflies near Edinburgh

In Britain there are 43 species none of which is endemic (ie confined to this country alone). The Odonata, the order comprising the dragonflies, is divided into two suborders, the Zygoptera or damselflies and the Anisoptera made up of 14 species of 'hawker' dragonflies and 12 species of 'darter' dragonflies. The damselflies have widely separated eyes, giving them a hammer-head appearance. When perched, their wings are folded together over the backs. On the other hand, the hawkers and darters have huge compound eyes that meet on top of the head and at rest their wings are held outspread. Generally speaking, the damselflies are slither in build than the others and have a more feeble flight. The two suborders are distinct also in the larval stage and only the damselfly larvae have conspicuous leaf-like respiratory gills at the tail-end of the abdomen.

The pond-hunter often finds larvae of the damselflies in his net as they frequent the pondweeds. Larvae of the hawkers and darters are not so readily found. Some species lie in the mud in the deeper parts and only approach the banks or the swamp vegetation when they are fully grown and ready to emerge as adult insects. Only larvae at their final stage of development can be identified with certainty. Most difficulty is experienced in distinguishing between closely related species.

Different species of dragonflies emerge at different times during the summer. Their maximum activity period during the day also varies between the species. Hence, one cannot hope to see all the species that

might breed in a suitable water on any one visit. However, hot sunny days are favourable for seeing the large hawkers flying over the breeding areas. The hawkers seldom alight and are difficult to catch. Binoculars are useful to observe details of colour pattern. Darters use perches from which they make sallies and to which they return. The damselflies tend to stay near their breeding grounds resting amongst long vegetation during cold or wet weather. In sunshine they are actively flying, mating and egg-laying.

Identification is not always easy and colour is no sure guide. Patterns of colour, though variable, are more useful. There are structural characters which are diagnostic but examination in the hand or even under the microscope is usually necessary to see those.

Distribution maps of Dragonflies in Britain, published in the New Naturalist monograph 'Dragonflies' by Corbet, Longfield and Moore in 1960, show a lack of information from this region. Having already found four species in the Union Canal, T. Boyd, A. Gillespie and I resolved to visit as many other suitable waters as possible in 1977. In all, more than 40 visits between the beginning of June and the end of September were made to 15 different waters or groups of waters. Seven species were found.

List of waters visited  
showing in which 10 Km square each is situated

Skinflats, Stirlingshire	NS98
Cross Base, West Lothian	NS97
Muiravonside Cem., Union Canal, Stirlingshire	NS97
Almond Bank, Union Canal, Stirlingshire	NS97
Avon Aquaduct, Union Canal, West Lothian	NS97
Woodcockdale, Union Canal, West Lothian	NS97
Easter Inch Moss, West Lothian	NS96 / NT06
Winchburgh Clay Pit, West Lothian	NT07
Broxburn, Union Canal, West Lothian	NT07
Muirend, Union Canal, West Lothian	NT07
Winchburgh Cem., Union Canal, West Lothian	NT07
Tailend Moss, West Lothian	NT06
0.5 metre east of Clifton Hall, Union Canal, Midlothian	NT17
Ratho, Union Canal, Midlothian	NT17
Sighthill, Union Canal, Edinburgh	NT17
1.5 metres south-west of Marchbank Hotel, Threipmuir, Midlothian	NT16
Threipmuir Reservoir, Midlothian	NT16
Macbiehill, Peeblesshire	NT15
Loanhead Clay Pit, Midlothian	NT26
New Saughton Hall, Loanhead, Midlothian	NT26
Milkhall Pond, Howgate, Midlothian	NT25
1 metre north-west of Eddleston, Peeblesshire	NT24
Portmore Reservoir, Peeblesshire	NT24
Lindean Reservoir, Selkirkshire	NT42
Tynninghame Estate, East Lothian	NT68

Species recorded

1 Green Lestes	<i>Lestes sponsa</i>
2 Common Ischnura	<i>Ischnura elegans</i>
3 Large Red Damselfly	<i>Pyrrhosoma nymphula</i>
4 Common Coenagrion	<i>Coenagrion puella</i>
5 Common Blue Damselfly	<i>Enallagma cyathigerum</i>
6 Common Aeshna	<i>Aeshna juncea</i>
7 Black Sympetrum	<i>Sympetrum danae</i>

The Green Lestes is a metallic green damselfly which rests with its wings held slightly open. The male can look like a rather 'washed-out' Common Ischnura.

The Common Ischnura damselfly is mostly black with a bright blue patch near its tail end.

The Large Red Damselfly is crimson with bronze and black markings.

The Common Coenagrion and the Common Blue Damselfly are very alike being blue all over with black markings. There are six blue Coenagrion species and all have two black lines down the side of the thorax, whereas the Common Blue Damselfly has only one black line there.

The Common Aeshna is a very large hawker dragonfly of a black ground colour with blue and yellow spots. A recently emerged specimen, seen and photographed by T. Boyd, was chocolate brown with white spots. It darkens and the blue colour develops later.

The Black Sympetrum has a black body with a club-shaped tail.

Table showing species of dragonflies found at the various waters

	1	2	3	4	5	6	7
Skinflats	x						x
Cross Base	x		x			x	x
Muiravonside		x		x			
Almond Bank				x			
Avon Aquaduct				x			
Woodcockdale				x			
Easter Inch Moss	x	x	x	x	x	x	x
Winchburgh Clay Pit		x			x		
Broxburn		x					
Muirend					x		
Winchburgh Cem.		x					
Tailend Moss	x	x		x		x	x
0.5 m. E. of Clifton Hall		x					
Ratho		x	x	x	x		
Sighthill		x					
1.5 m. S.W. of Marchbank			x				
Threipmuir		x			x		
Maobiehill	x	x			x		

	1	2	3	4	5	6	7
Loanhead Clay Pit		x			x		
New Saughton Hall		x					
Milkhall					x		
1 m.N.W. of Eddleston	x				x	x	
Portmore					x		
Lindean					x		
Tynninghame		x			x		

The numbers at the head of the columns refer to the names of the species in the list of species recorded on page 19.

A few of the records refer to 1976.

Our thanks are due to A. Liston for information from the Eddleston site.

Insufficient visits to any locality undoubtedly explains unexpected gaps in our records.

The Common Blue Damselfly and the Common Ischnura occur in practically every water where there are plenty of pondweeds and emergent vegetation. The Common Coenagrion, reputed to be rare here, was recorded in this area for the first time last year and it may be becoming more widespread.

Much work remains to be done. Records from Midlothian and East Lothian in particular are sadly lacking.

E.M. Smith

#### Do you use slug pellets?

There are 30 species of slug to be found in Britain, most of which occur in Scotland. Only two, the Garden Slug, recognised by its greenish black back and yellow foot, and the Netted Grey Slug, a soft pinkish-grey slimy animal, can be considered total pests.

The Black Slug (no description required!) is sometimes a sinner as, although like most slugs it is a desirable resident of our gardens, when tempted it may chop down lettuces and leave them to rot to a state fit for slug consumption. Similarly, only a handful of snails cause any trouble at all, but unfortunately damage is more obvious than good and all suffer from the reputation of a few. Moral: first know your slug or snail.

Molluscs may also suffer, as do many plants and animals, from well-meaning intervention. Last year on the Isle of May I noticed many dead and dying *Helix aspera*, the Common Snail, easily recognised as it is at least an inch across, globular, and mottled purplish grey in colour. These snails are very fond of bread and had obviously been eating the bread put out to poison the gulls. The connection though tempting is unproven, but I would be very pleased if anybody could tell me if this large snail is still common and obvious on the Isle.

S. Smith  
Royal Scottish Museum

In an Edinburgh garden - 16th May 1977

On Monday, 16th May about 7 pm a blackbird was giving a loud and very persistent alarm call, and another bird could be heard screaming.

As I reached the garden a bird was seen to dive to the ground pursued by a cock blackbird and a starling. The mobbed bird wrapped itself round a flowering tulip, with its head amongst the leaves, its tail touching the ground and long pointed wings wrapped around the stem rather like additional leaves. It remained completely still: the starling flew away while the blackbird, still chackchacking, appeared to have lost its prey and moved away after about three minutes.

I lifted the bird - a swift - off the plant. It never moved and when laid on the ground behaved as if it were dead. After one or two minutes I lifted it again when it immediately became very much alive. It showed no outward sign of injury and flew away normally when released.

E. Farquharson

Three members on holiday in Orkney

The mist enshrouded Eynhallow. Above on the peat track tramped three members. The sun was setting behind thin cloud when overhead they heard a strange cry, kwuk, kwuk, kwuk -- Divers. Two. The birds came down half a mile away. Three excited members hurried on to see a small lochan. Quickly down on all fours, crawling through the heather ... to see not two divers but four, .. eight, .. ten, .. twelve, .. 20 Red-throated Divers crooning and wailing to each other on the small lochan above Eynhallow.

C. Stewart

Earth Star (*Geastum triplex* - formerly spelt *Geaster*)

In the 1976 Journal an observation was made (see page 17) that the remains of Earth Stars had been found in the wood at Yellowcraig, East Lothian. Then followed a note that it is unusual to find the Earth Star so far north.

Mrs. E.M. Smith draws attention to an entry from herself in the 1973 Journal (see page 29) which is quoted below:

"I first saw this fungus (*Earth Star* - *Geastum triplex*) at Tynninghame during an ENHS fungi excursion led by Robin Vane 15 or more years ago. This colony is still doing very well. About 100 fruiting bodies were counted this year. I do not know of any other station for this fungus. It occurs frequently in beechwoods of the south of England."

Joe Carlyle writes:

"In October 1976 I found *Geastum* sp, the first I have ever found, at Linnmill, 2.4 km west of South Queensferry. I am not sure if *Geastum* has been found as far north as this before.

"I first thought that it was 'triplex', after another look, I thought 'rufescens'. When in doubt I try to let Dr. Watling have a look, but unfortunately I lost the sample before I could meet him.

"I have been several times back to the site this year, but no *Geastum*. Too much rain, I think."

### Red Broomrape (*Orobanche alba*)

While looking at wild flowers in St. David's Bay, Fife, I always look for what I consider a very interesting plant, Red Broomrape (*Orobanche alba*). In July this year, I found several plants. At first glance each plant looks like an orchid but there are no leaves on the flowering stem but numerous reddish scales with glandular hairs overall. The few flowers are purplish-red and fragrant. The whole plant has a reddish colour. The bumble bees were working the flowers as were several hive bees on the nearby Wild Thyme (*Thymus dorucei*). Red Broomrape is a parasitic plant growing on Wild Thyme. It obtains its food substances through underground stems which penetrate the roots of the host plant.

I like to think that on this same spot Sibbald, more than two centuries ago, found and first recorded Red Broomrape.

But what of the next 200 years with the oil terminal just across the way and the proposed giant gas-making complex just round the corner at Dalgety Bay?

J. Carlyle

### Reference to Sibbald

Young, William. *A list of flowering plants and ferns recorded from Fife and Kinross* (VC 85).

### A family of hedgehogs

On the outing to Stanhope Glen on 9th July 1977 a few of us were fortunate enough to see a nest of hedgehogs. A dog had disturbed it and we went to investigate. The nest was in a hollow in the ground, the parent in the centre with four young hedgehogs neatly packed around her. They were tucked up in plenty of chopped-up dry grass. A matted cover of herbage, which had been over the whole nest making it level with the ground and not easily discernible, had been displaced by the dog. After our quick look at the nest we replaced the cover.

Later I learnt from another member that once the nest had been disturbed the mother would make a new one and carry her young to it, so the dog's action would cost her 'many a weary nibble', but let us hope she would successfully rear her young and have something 'for a' her trouble'.

G.M. Wood

### Cuckoo and Meadow Pipits

While at Garth during the 20th-23rd May ENHS weekend, three other members and myself enjoyed quite a performance of a Meadow Pipit chasing a Cuckoo away. From telegraph wire to ground below, the little meadow pipit chased it defiantly and bravely faced it time and time again to get it away from its territory.

During the same weekend a similar incident was seen at Ben Lawers by various members of our group. This time there were many pipits and they did succeed in chasing the unwanted cuckoo away.

This was the first time I had ever seen meadow pipits chasing a cuckoo. I had heard about it but it is much better to see for oneself the determination of the little birds.

A.M. Gillon



Hard weather movement of Bramblings - January 1977

During January 1977, there was much frost and some snow in the Lothians with deep falls in upland areas. The following observations were made of large numbers of Bramblings in the Eskbank district, not a regular or frequent wintering area for this species in the observer's experience.

On 16th January, two large flocks of Bramblings of about 200 each were seen in Newbattle Woods, feeding on beech mast, drinking and bathing by the South Esk.

On 24th January, a flock of over 100 birds was noted feeding in a weedy turnip field on the outskirts of Eskbank. Their behaviour was lively but silent with much flighting to and fro and intervals of perching on nearby fences and on bushes in a bungalow garden. The orange breast and black and white wing bar of the males showed up well in the low afternoon sunlight.

Again, on 1st February a flock, this time of about 400, was seen feeding and flying in close formation in the same field. Again they were silent and perched on the same garden bushes which were virtually covered by the birds. Present as well but separate were over 200 Chaffinches, Greenfinches and some Tree Sparrows flying in a more open and less compact formation, with much chirping as they fed and flew in the weedy field.

After the first few days of February, the weather turned milder and most of the up country snow disappeared, so the absence of the Bramblings and other finches from the field when visited on 7th February was not unexpected.

E. Hamilton

A Woodcock sighting

While driving along the narrow road up Glen Tanar, near Aboyne, at the beginning of June, we saw a woodcock emerge from the verge just ahead of us. We stopped and watched as it slowly and with a peculiar crouching gait crossed the road to disappear into the woods. Though it was not possible to see the chick, I am convinced that this was a sighting of the woodcock's curious habit of carrying its young between its thighs.

M. Watson

OBSERVATIONS MADE BY MEMBERS DURING 1977

2.1.77 A large patch of Winter Heliotrope (*Petasites fragrans*) grows near Cockpen cross roads in Midlothian. On 2nd January, a sunny day following a night of hard frost, several fresh blooms were seen, more flowers were in bud and several flowers were brown and frosted, these last probably having been blooming during the previous week, over Christmas.

22.1.77 Snowbuntings were seen in a Balerno garden. N.B. per C.C. E.H.

12.2.77 At Hermitage of Braid with snow on the ground one Waxwing (*Bombycilla garrulus*) and about 40 Bramblings (*Fringilla montifringilla*) were seen. Blackbirds, in their usual energetic fashion dug among dead

leaves and snow patches, whilst Chaffinches and Bramblings watched and then exploited the exposed area. C.P.R.

March '77 Several vigorous plants of Lords-and-Ladies (*Arum maculatum*) were found on a roadside verge near Balgone, East Lothian. E.R.

14. 3.77 Eight Hawfinches and one Kingfisher were seen at the Botanical Garden. W.C.

19. 3.77 On the outing to the Middleton area birds seen included Goosander (two female at Gladhouse), about 500 Golden Plover at Middleton, Green Woodpecker (two near the junction of B6368 and A7) and Blackcock (six near B6368). M.M.

2. 4.77 Snowbunting were seen at Musselburgh lagoons. W.C.

13. 4.77 On a sycamore tree in the front garden of the British Council for Spastics house on the Corstorphine Road, one female Great Spotted Woodpecker (*Dendrocopus major*) was seen. C.P.R.

16. 4.77 On the outing in the West Linton area, members saw molehills at 382 m (1250 feet). E.F.

19. 4.77 One Great Spotted Woodpecker (male) was seen at Heriot Watt University, Riccarton. C.P.R.

4. 5.77 An interesting and unexpected sight on the society's visit to Corstorphine Hill was a Sulphur-crested Cockatoo, fairly obviously having escaped from the zoo, being mobbed by a Carrion Crow. B.W.

7. 5.77 Male Lapland Bunting in summer plumage was seen at Aberlady Bay. W.C.

11. 5.77 Lousewort (*Pedicularis sylvatica*) was recorded in Roslin Glen, below the Powder Works. C.P.R.

17. 6.77 Many plants of Orpine (*Sedum telephium*) were found beside the disused railway line, now an East Lothian walkway, near Ormiston. On the same day two nearly full grown fox cubs were seen in scrub in Hadfast valley, near Corisland, East Lothian. E.H.

9. 7.77 On the outing to Stanhope Glen among the more interesting species of birds seen were Kingfisher, young Cuckoo being fed by Meadow Pipit, Ring Ouzel. Plants seen included Alexanders (*Smyrnum olusatrum*), Hairy Stonecrop (*Sedum villosum*), Starry Saxifrage (*Saxifraga stellaris*), Golden Rod (*Solidago virgaurea*), Blood-drop-emlets (*Mimulus luteus*). Some members saw a family of hedgehogs - see note on page 22.

Note: Alexanders is an introduced plant formerly cultivated as a pot-herb. It is spreading especially near the sea. In the 1885-1886 Transactions of the Society it is described as a less common plant found on an excursion near Craigmillar Castle. It is still found in this area today.

15. 7.77 Female Tufted Duck (*Aythya fuligula*) was seen on the Union Canal at Viewforth, with nine pulli. C.P.R.

16. 7.77 On marshland on the north side of the River Tummel, near Kinloch Rannoch, eight stems about 90 cm high, bearing many bright yellow flowers, were seen. Examination showed the plant in question to be a member of the Primrose family. Later it was identified at the Royal Botanic Garden, Edinburgh as *Primula florindae*, a native of Tibet which has been introduced to Britain through gardens. P.B.

21. 7.77 Members who attended an outing with the Botanical Society of Edinburgh to pit bings near Gorebridge, were shown the moss *Campylopus itroflexus* at a point about three quarters of the way up the bing. It is an alien known in various parts of the southern hemisphere, often growing around volcanoes. Since 1955 it has become locally plentiful in Britain growing in tufts on heathland and other warm places. When dry it is clearly recognisable by the white 'stars' formed by the points on the leaves which spread out. J.K.R.

20. 7.77 C.P.R. led a party of members and friends through Leith Docks. On 'Stone Island' between old Imperial Lock and the new entrance to Imperial Dock they were shown a ternery of about 55 pairs of Common Tern with many well-grown pulli and one Arctic Tern among them. J.K.R.

23. 7.77 At least 25 Ringlet butterflies were seen at Cauldshield Loch, Galashiels. C.S.

6. 8.77 At Ardmore Point, Helensburgh, an SWT reserve, five species of butterfly were seen - Green-veined (*Pieris napi*), Small White (*Pieris rapae*), Small Copper (*Lycaena phlaeas*), Common Blue (*Polyommatus icarus*) and Small Tortoiseshell (*Aglais urticae*). Birds seen included Red-breasted Merganser and Sandwich Tern at sea and Bar-tailed Godwit and Oyster-catcher 'flying' on to the salt marsh. C.A.P.

8. 8.77 On visiting Leith Docks to follow up a report that the grass Loose Silky-bent (*Apera spica-venti*) was growing by one of the grain silos, it was discovered that the vegetation around all three had been completely destroyed by weed killer, thus depriving botanists of one of Edinburgh's most exciting habitats. E.H.J.

E.H.J. asks, 'How long is weed killer effective? How serious is it?'

10. 8.77 Between Dunglas Burn and Cove, a colony of about 30 Horned Poppy (*Glaucium flavum*) was seen. Have they been planted intentionally? On the same day House Martins were seen nesting on the cliff face. C.S.

17. 8.77 Five Ruff and two Common Sandpipers were seen on an evening visit to Musselburgh Lagoons. C.A.P.

20. 8.77 At Glentress Forest an adult specimen of the slug, *Limax maximus*, was found and identified. C.P.R.

Aug '77 Flowering Rush (*Butomus umbellatus*) with three or four flower heads was noted beside a privately owned pond in Heriot Valley. E.H.

Note: This plant is native but local in England. It is a probable introduction in Scotland.

3. 9.77 Waders of special interest seen on the ENHS outing to Aberlady Bay were four Whimbrel flying over the dunes near the Point; Ruff, Knot and Purple Sandpiper on Hummell Rocks; four Little Stints on the sand near the Ternery. Members also had good views of Velvet and Common Scoter at the Point and of Merganser and Arctic Skua close to the Point. C.A.P.

Also at Aberlady on the same day two Canada Geese (*Branta caadensis*) were seen. A dead Shelduck (*Tadorna tadorna*) pullus was found. It had been ringed for study purposes - left leg green, right leg yellow over orange. As it was known that research on shelduck was being carried out by Durham University the finding was reported to the Reserve Warden. C.P.R.

6. 9.77 A Painted Lady butterfly (*Vanessa cardui*) was noted sunning on a stone path in an Eskbank garden. E.H.

17. 9.77 Larvae of the Kentish Glory moth (*Endromis versicolora*) were found in great abundance on Silver Birch and Goat Willow (*Salix caprea*) near Glendoll Youth Hostel. The moth is a much prized find amongst collectors. A.D.L.

28. 9.77 A hen Redstart was seen in the garden at Craigleith, Edinburgh. It stayed until 4th October.

Is this rather late for a redstart to be seen in the area? C.S.

2.10.77 Small Tortoiseshell butterfly (*Aglaia urticae*) was seen by the old graveyard at St Mary's Loch, Selkirkshire. It was a clear sunny day. E.H.

8.10.77 On the fungi outing to Bush Estate led by Dr. P.A. Mason, between 50 and 60 species were found including *Laccaria amethystina*, *Exidia glandulosa*, *Coprinus comatus*, *Phallus impudicus*, *Lycoperdon echinatum*, *Peziza aurantia*, *Boletus subtomentosus*, *Clavaria rugosa*, *Hypholoma fasciculare*. J.H.B.

13.10.77 This was a day of sunshine and light westerly breeze. On it the following bird movements were noted from a suburban garden:

A party of 20-25 House Martins were seen flying high and feeding over a small wood in Eskbank for over two hours. During this time three parties of Redwings of 20, 6 and 30 were noted flying from east to west over the same trees while, closer to hand, on an old apple tree, some dozen Long-tailed Tits were delicately picking insects from the crevices of the bark. E.H.

22.10.77 Two of the grain silos were revisited and nothing had grown in the weed-killer areas (see 8.8.77) though Pigweed (*Amaranthus retroflexus*), Thorn-apple (*Datura stramonium*), *Erucastrum gallicum* and *Setaria viridis* were growing nearby. E.H.J.

30.10.77 Winter Heliotrope (*Petasites fragrans*) was seen flowering near Granton gas works. E.H.J.

3.12.77 The Water of Leith Kingfisher made another appearance, this time at Murrayfield. It was flying upstream along the stretch of river in front of the Ice-rink. M.W.

#### Observations from a six year old member (all his own work)

7. 5.77 I seen a frog at Carron Glen. Andrew Davies had caught it in his net. I even saw a dipper dipping in the water. I found a Horse Tale.

22.10.77 While I was crossing the bridge at Dryburgh I saw a dipper on a stone. At Dryburgh we saw a lot of brambels. Dorothy was always popping them into her mouth. One of the hills was 1385 feet. David Gorman

### FIELD WORK AND SURVEYS

**FORTH ISLANDS BREEDING BIRDS SURVEY** - The Island Bird Counts have now been running for 19 years, and the 1977 report is on page 31 of this Journal.

*Organiser* - R.W.J. Smith, 33 Hunter Terrace, Loanhead.

**CORSTORPHINE HILL SURVEY** - The botanical survey is under way, and helpers would be welcome throughout the year.

*Organiser* - Mrs. M. Watson, 8 Ormidale Terrace, Edinburgh 12.

**LOTHIAN BADGER SURVEY** - Volunteers are still needed to ensure adequate coverage of the area.

*Organiser* - Mrs. E. Farquharson, 6 Chamberlain Road, Edinburgh 10.

**UNION CANAL SURVEY** - An article on this year's work appears on page 29.

*Organiser* - Mrs. E.M. Smith, 33 Hunter Terrace, Loanhead.

### EXCURSIONS - 1977

*Key for excursions:* B - Botanical, Fb - Fish biology, f - fungi, E - Entomology, Ff - Freshwater fauna, G - General, Ge - Geology, IBC - Island Bird Count, Lh - Local history, M - Mammals, Mol - Molluscs, O - Ornithology, S - Shore

#### On Saturdays and at weekends

#### Leader

22 Jan	Meteorological Office and Air Traffic Control, Edinburgh Airport		Airport Staff
19 Feb	Winter walk - North Berwick to Gullane		Mrs. G.M. Wood
19 March	Wild Goose Chase - Middleton area		Mrs. M. Watson
16 April	West Linton area		Mrs. E. Farquharson
23 April	Dawyck and Manor (by kind permission of Mrs. Balfour)	G	Mr. Blair
30 April - 1 May	Biological recording in Scotland (BRISC) Weekend at Heriot Watt University - Riccarton		Dr. A. Sommerville
7 May	Carron Glen, with Botanical Society of Edinburgh	B	Dr. M. Burge
14 May	St. Abbs and Coldingham	G	Mr. R. Weatherhead
20-23 May	Garth with Perth Society of Natural Science	G	Mr. G. Bell Miss J. Raeburn
28 May	Stirling University (Aquatic pathology unit) and Crook of Devon Fish Farm	Fb/G	Cancelled
5 June	Grey Mare's Tail and Dobb's Linn	B/Ge	Mr. A.J. Smith
11 June	Lamb and Fidra	IBC/O	Mr. R.W.J. Smith
11 June	Farne Islands (outing re-directed to Bamburgh)	O/M	Cancelled Mr. H. Hughes
12 June	Inchkeith	IBC/O	Mr. R.W.J. Smith
18 June	Craigleith	IBC/O	Mr. R.W.J. Smith

On Saturdays and at weekends (cont)Leader

18 June	Earlsferry - weed garden	B	Mrs. Roger Banks
25 June	Avon Valley	B/E/M/O	Dr. A. Sommerville
26 June	Avon Valley		Dr. A. Sommerville
2 July	Aberlady Bay, with Hamilton Natural History Society		Mrs. M. Watson
9 July	Stanhope Glen	G	Dr. J. Slee
16 July	Crichton Glen	E	Dr. A. Sommerville
23 July	Alva Glen	G	Mr. C.P. Rawcliffe
30 July	Hope Hills	G	Mr. D.H. Jones
			Mrs. P. Bell
6 Aug	Ardmore Point, Helensburgh, with Scottish Wildlife Trust	B/G	Mr. J.C. Brownlie
13 Aug	Bush Estate	M	Mr. K. East
13 Aug	Portmore Loch (moth collecting)	E	Mr. E.C. Pelham- Clinton
20 Aug	Glentress Forest	G	Mrs. E. Farquharson
27 Aug	Kincraig Cliffs and Shell Bay with Dundee Naturalists' Society	G	Lt.-Comdr. E.F.B. Spragge
3 Sept	Aberlady	O	Mr. C.A. Pountain
10 Sept	Reedie Hill Deer Farm	M/G	Dr. J. Fletcher
16-19 Sept	Glen Clova		Mrs. C. Stewart
24 Sept	Carlops to Balerno	G	Mr./Mrs. C. Warren
1 Oct	Bathgate Hills	G	Mr. G. Bell
2 Oct	Introduction to mycology - Water of Leith	f	Dr. R. Watling
8 Oct	Bush Estate	f	Dr. P.A. Mason
22 Oct	Eildon Hills and Dryburgh		Mr. G. Bell/ Mr. A. Dickson

Evening excursions

27 April	Introduction to Geology - Holyrood Park	Ge	Dr. C.D. Waterston
4 May	Corstorphine Hill	O/B	Mrs. M. Watson
11 May	Introduction to bird song - Roslin	O	Mrs. E. Hamilton
19 May	Royal Observatory, Blackford		Observatory staff
25 May	Introduction to botany - Balerno	B	Miss J.K. Raeburn
1 June	Union Canal	Ff	Mrs. E.M. Smith/ Mrs. A. Gillespie
8 June	Polton Woods	Mol	Dr. S. Smith
15 June	Pond dipping - Ratho	Ff	Mrs. E. Hamilton
22 June	Royal Botanic Garden	B	Dr. C.C. Wood
29 June	Port Seton	S	Mr. D. Heppel
6 July	Red Moss	B/G	Miss J. Raeburn
13 July	Corstorphine Hill	O/B	Mrs. M. Watson
20 July	Leith Docks	G	Mr. C.P. Rawcliffe
27 July	Roslin	Lh	Mr. G.R. Campbell
3 Aug	Cairncapple and Silver Mines	Ge	Mr. S. Munro
10 Aug	Introduction to entomology - Arthur's Seat	E	Mr. W.B. Grubb
17 Aug	Introduction to waders	O	Mr. C. Pountain

Informal excursions - In addition, several informal excursions took place during the winter season

## REPORTS AND EXCERPTS FROM REPORTS

### Corstorphine Hill Survey

#### Lepidoptera (Butterflies and Moths) on Corstorphine Hill

Andrew Liston has made a study of butterflies and moths seen on Corstorphine Hill. He sends in his list of 26, saying that it is by no means complete, many species having been left out due to difficulty of identification. He adds that it does, however, give a cross section of the rich lepidoptoran life that can be found in the area.

The list is lodged with the other recordings for Corstorphine Hill. Below are given short notes on the species probably non-resident or not permanently established. When out on the Hill members are asked to keep a record of any sightings of these.

#### Butterflies:

Small White (*Pieris rapae*) - regular on the Hill but probably does not breed there. Like all the butterflies it is most often seen in the walled garden. It is a pest, feeding on cabbages and other economically important brassicas and is a migrant, visiting Britain each year.  
(May-June, July-August)

Large White (*Pieris brassicae*) - the least common white on the Hill, easily determined by size, it is also a migrant and feeds on cabbages.  
(June, July, August)

Peacock (*Inachis io*) - one specimen seen at top of the Hill in July.  
(July, August, September)

Red Admiral (*Vanessa atlanta*) - frequent, commoner in some years than others. A migrant. Butterflies result from eggs laid by original butterflies, but not strictly resident, for the butterflies would not survive without replenishing from migration.  
(June-October)

#### Moth:

Silver Y (*Plusia gamma*) - nowhere completely resident in Britain, a summer migrant, eats every kind of low growing plant. Several specimens were caught.

### Union Canal Survey

In summer floating masses of an alga, *Cladophora fracta*, are much in evidence. *Cladophora* is coarse to touch and can be easily distinguished from *Spirogyra* which is slimy to touch. Although unattractive as it floats on the surface, the individual filaments of *Spirogyra* can be seen, under magnification, to be made up of cells joined end to end with a delicate green chloroplast nicely coiled along the length of each cell.

Zygnema and Mougeotia are two filamentous algae which look like *Spirogyra* while in the water, but magnified each can be seen to have a distinctively shaped chloroplast.

In some places along the canal, *Enteromorpha intestinalis* floats on the surface, bright green tubular filaments twisted together.

In spring, attached to the bank along the line of the water surface, *Ulothrix* grows in bright green tufts rather slippery to touch.

*Cladophora glomerata* grows attached to the bank and great tufts can be seen especially in summer. It has a very much branched dull green growth, that in winter appears to change to a brown colour, but in fact it can be seen with a x 10 lens to be absolutely covered in epiphytic diatoms. *Gomphonema*, a wedge-shaped diatom is usually predominant.

*Zygnema*, *Mougeotia* and *Spirogyra* do not have epiphytes growing on them, each is covered in a gelatinous secretion which gives them the sliminess and prevents epiphytic growth.

Much more insignificant are two colonial algae, *Tetraspora* and *Aphanothece*, both look like small blobs of green jelly. *Tetraspora* consists of spherical cells, usually in neat sets of four, contained in a gelatinous matrix. *Aphanothece* has some oval cells scattered throughout the matrix.

Amongst the filamentous algae and other vegetation, lurk many species of crustaceans. The copepod, *Cyclops*, and up to 14 species of *Cladocera* have been identified. In winter, *Cyclops* is the evident group with only a few *Cladocera*, but in summer the situation is reversed when there is an abundance of *Cladocera* and only a few *Cyclops*.

The Water Louse (*Asellus aquaticus*) and the freshwater Shrimp (*Gammarus pulex*) are two larger crustaceans found which are mostly scavenger feeders. Great numbers of *Asellus* are amongst the filamentous algae.

In 1977, *Velia saulii* (the Water Cricket) and *Gerris lacustris* (a pond Skater) - see Ben Lawers report, page 40 - have been seen scurrying about on the surface of the water.

The Water Boatman (*Notonecta glauca*) is present in large numbers and three species of the Lesser Water Boatman (*Sigara fallax*, *S. fossarum* and *S. distincta*) have been found. The species of *Sigara* are not easy to separate, but magnification of the claw of the foreleg can usually identify the male.

Beetles do not turn up in great numbers, but several species of *Dytiscidae* family and one species of *Haliplidae* family are to be found.

An interesting find on 19th May at Harrison Road Bridge was several very large leeches swimming eel-like near the bank. These were *Haemopsis sanguisuga* (Horse Leech) about 10 cm long when extended. The next week at Winchburgh one was seen making its way on dry land along the bank. These leeches leave the water to lay their cocoon of eggs in damp mud. Other leeches found in the canal are much less spectacular, such as *Glossiphonia heteroclita*, a clear yellow-amber about one centimetre long when extended, and *Helobdella stagnalis*, *Erpobdella octoculata* and *Theromyzon tessulatum*.

The Molluscs are well represented with 11 species of Gastropods and one bivalve, *Sphaerium corneum*. The Great Pond Snail, *Limnaea stagnalis*, about 3 cm long is always much in evidence; also present is the Dwarf Pond Snail, *Limnaea truncatula*, about 5 mm long. Between these two in size is the Wandering Snail, *Limnaea peregrina*, well-named as it will not stay for long in a dish of water. The Bladder Snail, *Physa fontinalis*, is a very common gastropod in the canal. The Lake Limpet, *Ancylus*



*Inchmickery* can be found clinging to vegetation and stones. *Bithynia tentaculata*, a snail with a medium-sized shell, has long thin tentacles which are obvious when the creature is on the move. Only one specimen of the Great Ramshorn, *Planorbis corneus*, has been found but several tiny *Planorbis laevis* have been seen and some of the Many-horned Ramshorn, *Planorbis contortus*. A few *Zonitoides nitidus* have been seen. This is a gastropod not entirely aquatic and just as likely to be found in muddy places. Jenkin's Spire Shell, *Polamophyrgus jenkinsi*, has been seen. Helen Mellanby in her book, 'Animal Life in Freshwater', states that this was originally a salt water species that has colonised and spread over most of the country. The eggs develop inside the shell without fertilisation and broods of 20-30 fully developed young are produced. No males have been found. This means that if just one snail survives transportation to a new site, it may be colonised. In 1976 two sites near Edinburgh were found, where the bottom mud over considerable areas was covered with this small snail.

Only two worms have been found, the long thin *Lumbriculus variegatus* and *Stylaria lacustris*, a short worm with long hairs on its body and a long proboscis permanently extended.

Four flatworms are present, *Polycelis tenuis*, *Dugesia polychroa*, *Dendrocoelum lacteum* and *Planaria torva*.

Some insects are aquatic in the larval stage. Those found breeding in the canal are the Alder-fly, *Sialis lutaria*, Mayfly, *Cloeon dipterum*, three species of the Blue Damsel-fly, *Ischura elegans*, *Coenagrion puella* and *Enallagma cyathigerum*. Of the Caddis-flies, two adults have been identified, *Limnephilus flavicornis* and *Arthripsodes aterrimus*. The larva of Diptera flies, *Chaoborus*, *Chironomids*, *Tanytus* and *Bezzia* are plentiful.

A. Gillespie

#### Reference:

Mellanby, H. (1963). *Animal Life in Freshwater*. 6th ed. Methuen.

#### Forth Island Bird Count 1977

	Inchmickery/Islets	Inchkeith	Fidra	Lamb	Craigleith
Fulmar		445	54	3	60
Cormorant	11			157	38
Shag	7	5	6	18	156
Greater Bl Back					2
Lesser Bl Back	5	c350	20	c5	?200
Herring Gull	c80		c400	c300	c3000
Kittiwake		338	227	95	490
Common Tern	548				
Roseate Tern	54				
Sandwich Tern	580				
Razorbill		20	5+	18	65
Guillemot		3	10+	600	1500 bds
Puffin		450 bds	51		950 bds

Fulmar - occupied sites, not necessarily breeding  
 Craigleith Guillemots - birds on breeding cliffs  
 Puffin - all birds, on land and offshore  
 All others - pairs or nests  
 x - present but not counted; c - about  
 Inchmickery and Fidra counts by kind permission of the RSPB

The frustrations of island-going were more evident this year than ever before. The first Lamb/Fidra trip was postponed because of a gale and heavy rain. On the second we could not land on Fidra and there were several wet feet - and knees - because of the heavy north-east swell as we came off the Lamb. The Inchkeith trip was cancelled when the boat was put out of action by thieves. Fortunately we were able to make a private trip to do the count. Another cancellation was the annual trip which we have made round the 'other' islands of Inchgarvie, Inchcolm and the small islets. An alternative small boat trip found us going round the harbour with a faulty engine - and another wasted night. Stan da Prato had better luck at the next attempt and I am grateful to him for completing the counts. The RSPB have again kindly supplied counts on Inchmickery and also their counts on Fidra. These are not strictly comparable to ours but I am extremely grateful for these counts to fill in the missing figures.

Many of our sea-birds have been increasing in numbers since the beginning of this century. The situation may soon be reached in the Forth when their numbers will be limited by such natural factors as the availability of food or nest-sites rather than by human predation. When this happens it may well be the first time for many hundreds of years.

In this connection, the mechanics of population control in the Cormorant are interesting. Disturbance at the long-established Farnes colony may well have been a factor in the establishment of the Lamb colony in 1957. Similarly, disturbances on the Lamb in 1966 led to the first nesting on Craigleith. In 1976 instead of the expected 220 nests on the Lamb there were only 150 - probably caused by unauthorised landings in May. And now this year, as well as a record 38 nests on Craigleith, Cormorants have started a small colony on some islets near Inchmickery, known as the Cow and Calves. On 24th June, Stan da Prato found 11 nests there and there were 30 adults ashore. On the Lamb itself there were 157 nests giving a combined total of 206 nests for the whole of the Forth which would be a near-average figure for the Lamb.

Cormorant colonies in Britain seem to be limited in size to a maximum of between 200 and 300 pairs. This is probably due to an internal population control mechanism (what Wynne-Edwards calls a homeostatic or self-balancing system) rather than to any immediate food shortage - though in the long run it may be designed to prevent just that. During the initial rapid build-up of Cormorant numbers on the Lamb there was a drop in the size of the Farnes colony but it soon recovered to its original 220-250 pairs. The numbers on the Lamb reached the 280 mark before settling down to nearer 250 pairs. This suggests that, although the breeding population of a colony of Cormorants does not rise beyond its self-imposed maximum, there must be a considerable non-breeding population which will nest if given the opportunity. Cormorants cling tenaciously to traditional breeding sites, and the colonisation of a new area or even of an island adjacent to an established colony, represents the breaking of a strong

psychological barrier. The Lamb and Craigleith group have behaved as one colony keeping within its permitted population limit. Now there is this extension of range to the Cow and Calves. The interesting question is what will happen with the Inner Forth birds? Will they behave as part of a single Forth colony with a self-regulated peak or will the two groups be able to increase in numbers beyond a single colony limit?

Another interesting Cormorant development is a new colonisation on islets near Fast Castle. Birds bred there in 1976 and there were 34 nests on 24th May this year. There is space on these islets for a much increased number of nests but perhaps the near presence of the two large colonies of Farnes and Lamb may have an inhibiting effect. We shall follow the fortunes of this colony with interest.

Although the Cormorant is flourishing, its smaller cousin, the Shag, is undergoing a spell of severe reduction in numbers. During the first 16 years of our counts the Shag population doubled on average every seven-and-a-half years. So it was four times more numerous on our islands in 1974 than it was in 1959. Since then, there have been three years of decrease on the East Lothian islands, with numbers dropping from 507 to 355 nests (down 30 per cent). The Inner Forth birds, on the other hand, are still increasing with 47 breeding pairs on five islands compared with 27 in 1976. The 1975-76 decreases were attributed to deaths caused by 'red-tides' but there has been no report of such a phenomenon this year. Human disturbance or pollution can probably be ruled out as a relevant factor in the decline. So there must be a natural cause (or causes). Red-tides, shortage of food in summer or winter, displacement by other species (as Guillemots on the Lamb)? - time may provide an answer.

Of the other species, Guillemot continues to do well with three pairs breeding on Inchkeith (first nest was in 1976) and some 600 pairs on Lamb. Puffin counts are down and so apparently are the numbers of chicks, but this is a difficult species to census and it is hoped that 1978 will show a clearer picture. Another auk - a Black Guillemot - summered in breeding plumage, being first seen off Craigleith in May then later at Fidra. There seems no reason why this bird should not, one day, breed in the Forth. Of recent colonisers it is worth mentioning the first Great Black-backed Gull nest on the Bass, and two pairs were proved breeding on Craigleith.

R.W.J. Smith

Reference:

Wynne Edwards, V.C. (1962). *Animal Dispersion in relation to Social Behaviour*. Edinburgh and London.

The Bush Estate excursion (Leader - Dr. W.A. Fairbairn)

(This excursion took place after the closing date for contributions for the 1976 Journal. As members enjoy visits to the Bush Estate for the study of various branches of Natural History it was felt that this interesting background account of the area should be included in the 1977 Journal. A copy of the paper about the Edinburgh Centre of Rural Economy given to members on this excursion is in the Society's library).

The excursion took place on the 20th November 1976, a pleasant, sunny autumn day. The rendezvous was at Crosshouse, the birthplace of the late Professor C.T.R. Wilson of cloud chamber fame and a Nobel Prize winner. From there the motorcade moved up to Castlelaw Farm where the leader gave some information on the Edinburgh Centre of Rural Economy (embracing the three estates of Bush, Boghall and Dryden), its activities, its importance and its world-wide reputation; further information was given on the topographical history of the region from the time of the last glaciation of about 10,000 years ago; man reached Scotland about 4500 BC and, according to peat analyses, began early cultivation about 3000 BC. The climate, exposure and shelter of the terrain were also stressed.

The party then moved up to the Castlelaw Fort, now unfortunately no longer open to the public (unless with special permission). The fort is probably pre-Roman; finds when it was first opened showed that the inhabitants had associations of some kind with the Romans. A good view of the landscape and its land use was obtained from the top of the fort, including the area of the Bush estate with all its diversity.

A move was then made down to the entrance to the estate where a shelter-belt of trees planted in 1955 was demonstrated showing the shelter provided by Sycamore and Scots Pine on the west side with mixed groups of Sessile Oak and European Larch in the two middle rows and groups of amenity trees, including Beech, Ash, Gean, Hawthorn and Rowan on the east side visible from the motor roads.

The party then proceeded to the Bush arboretum with its attractive collection of broad-leaved and coniferous species, with shrubs and Ericas in the rock garden. A considerable time was spent examining and identifying the less well-known species, including *Sciadopitys* (the Japanese Umbrella tree), *Cryptomeria* (the Japanese Cedar), the Deodar Cedar from the Himalayas, as well as the European and the Grand Silver Firs.

In the last half hour the dell leading down to the Glencorse Burn was examined with its large *Tsuga* (Western Hemlock) and the *Wellingtonia* (*Sequoiadendron*). Further on an examination was made of the valley floor with group planting of Oak, Beech and Ash, as well as some line planted Scots Pine at one time dressed with chemical repellent against roe deer. The excursion finished literally at last light, the hope being expressed that Bush should be revisited.

W.A. Fairbairn

Outing to Meteorological Office and Air Traffic Control -  
22nd January 1977 - Edinburgh Airport

Meteorological Office

This department has two main functions:

- 1) The collection of local meteorological data as part of the Government controlled service covering the whole of Britain.
- 2) The provision of weather information for the use of the airport air traffic control staff and air crews.

The station is equipped with instruments to give wind speed and direction, ground and air temperatures, wet/dry bulb temperatures for humidity, barometric pressure, rainfall, runway visual range, height of cloud base etc. Some of the instruments are linked to the office for automatic recording and others can be read within the office whilst a few require a visit to the instrument compound outside. All this data, in coded form, is read hourly and transmitted to Prestwick and from there to Bracknell, Berkshire, the meteorological centre for Britain. Similar data is supplied at half-hourly intervals to air traffic control and the airport authorities (ie BAA). Prestwick also send the hourly data to Pitreavie for use by the RAF and Air Sea Rescue Services. The Edinburgh office also send out over the teleprinter service the hourly data to all British airports equipped to receive it and, itself, receives back similar information in the same format from these airports. The two main teleprinters are in constant output operation providing weather information; one from Heathrow and one from Bracknell. They print out weather charts for about 50 minutes each hour and one is used during the ten-minute break to transmit Edinburgh data to Prestwick.

Other work at the station is concerned with certain observations of upper air conditions and the provision, when required, of three-hour or sometimes nine-hour forecasts for aviation purposes. The station officers also have to deal with telephone calls from the general public.

The weather data which floods into Bracknell from the many places in Britain, from overseas and from satellites is fed into computers from which emerge eventually overall weather patterns which help to make weather forecasting more accurate than it would otherwise be.

#### Air Traffic Control

The ATC officers are responsible for the control of all aircraft movements within a ten-mile radius of the airport and have the assistance of the radar installation and of trained observers who can detect and follow aircraft either on a 40-mile radius or a 75-mile radius scan. Normally incoming aircraft are accepted from an adjoining radar control when about 25 miles from Turnhouse. One ATC officer looks after the aircraft whilst still approaching Edinburgh and a colleague takes over for the actual landing approach and touch-down. They are in continuous three-way contact with their radar officers and the plane crews. Every aircraft using the airport, including scheduled air services, has to lodge a flight plan with ATC before it can take-off and both the ATC and radar officers have details of this in strip form in front of them before the take-off and until after a touch-down.

ATC exercise their control within the 10-mile radius and up to 6000 ft above ground. Scheduled air services to London and southwards keep within a prescribed 10-mile wide air corridor but local aircraft and overflying air liners are not so confined but must not enter the 10-mile corridor without ATC permission. Should any pilot report any difficulty on approach, either of mechanical failure or other factor which might make landing at all hazardous, the ATC automatically warn the airport fire and ambulance services so that they can be on their way to the runway on which the aircraft is due to land.

H. Hughes

### Visit to Dawyck and the Manor Valley - 23rd April 1977

Not far past the little village of Stobo, with its restored Norman Church we drove into Dawyck estate. The daffodils flanking the drive were not all in bloom but there was promise of a beautiful show of mixed variety. Mr. Blair took us round the grounds where he showed us some very old Douglas Firs (*Pseudotsuga douglasii*, now *P. menziesii*), the oldest being 160 ft high and 142 years old, some Wellingtonia (*Sequoiadendron giganteum*), some Silver Firs (*Abies pectinata*, now *A. alba*), Noble Fir (*Abies nobilis*, now *A. procera*), Bristle-cone Pine (*Pinus aristata*), Paper-bark Maple (*Acer griseum*) with dark red bark. There are examples of this species to be found in California 5000 years old - the oldest trees in the world. We saw Western Hemlock (*Tsuga heterophylla*). We were very interested in seeing the Dawyck Beeches (*Fagus sylvatica dawyckii*) fastigate in form. Strangely these beeches do not reproduce by seed, they have to be propagated by cuttings.

We looked at a specimen of European Larch (*Larix europaea*, now *L. decidua*) which was planted in 1725 - one of the original larches to be introduced into this country. We also saw a very fine Lime avenue, now about 200 years old.

Members went on by bus or on foot over the hills to the Manor valley where the Black Dwarf's cottage was visited. On the cement floor we saw quite a number of wings of the Small Tortoiseshell Butterfly - presumably the bodies had disintegrated leaving only the wings.

Birds seen during the day included Goosander, Black Grouse, Short-eared Owl, Dipper and Sparrow Hawk being mobbed by Heron.

B. Gordon

### Note - Extract from 1971 Journal - see pages 15 and 16

"Recently, when on a ramble in Selkirkshire, we explored the attic of a disused cottage. Scattered over the floor were hundreds of Small Tortoiseshell butterfly wings. Though the wings were intact, we were mystified by the absence of bodies."

George and Tom Bell

George and Tom discussed their findings at the Royal Scottish Museum. Mr. Pelham-Clinton thought that wasps were responsible. He told them that often, when there is a late autumn, foraging wasps have been known to eat collector's specimens and leave the wings and that it was possible that this fate had befallen the butterflies. This opinion was supported by a bee-keeping ENHS member who said that wasps often treated the bodies of bees lying outside the hives in the same way.

### Weekend at Riccarton on the campus of Heriot Watt University - Organised by the Biological Recording in Scotland Committee (BRISC) - 30th April - 1st May 1977

The meeting was attended by 48 students and four tutors. The ground covered for recording was the whole campus in squares NT16 1768 and 1769.

The four subjects chosen were:

Tutor

1. Habitat Survey	Mr. R. Weatherhead
2. Trees and Woodlands	Mrs. P. Robertson
3. Woodlice	Dr. A. Sommerville
4. Small mammals	Mrs. E. Farquharson

Habitat survey training

The Scottish Wildlife Trust started a survey in the Lothians some years ago, and it is hoped to complete the work this year. Other groups in the areas have done similar surveys. As an exercise the grounds of the University were surveyed by those attending the course, thus making a basic biological record to be added to the files of the survey. Most of the wildlife of the grounds was found to be in mixed woodland and fragment policies. Badger signs were noted. A variety of woodland birds was sighted, and an active rookery counted. Artificial ponds had added variety to the campus, giving breeding areas for amphibians. Duck numbers were noted. Other water-fowl were seen breeding. Shaded pond and stream conditions suited ferns and liverworts. At the edge of a disturbed area of ground, now planted with conifers, an interesting mire site with natural marsh plants was noted. This data, and more, was added in code form to a map, and detailed notes were made, so giving a quick clear reference to wildlife areas.

R.W.

Woodlice

Woodlice found were: *Oniscus asellus*, *Porcellio scaber*, *Trichoniscus pusillus*, *Philoscia muscorum* and *Haplop hthalmus mengeio*, a species which is unusual in Scotland.

A.S.

Small mammals

Trapped	- Woodmouse	( <i>Apodemus sylvaticus</i> )
	Common Shrew	( <i>Sorex araneus</i> )
	Pygmy Shrew	( <i>S. minutus</i> - some doubt)
	Weasel	( <i>Mustela nivalis</i> )
Seen	- Grey Squirrel	( <i>Sciurus carolinensis</i> )
	Water Vole	( <i>Arvicola amphibius</i> )
From evidence of presence	- Badger	( <i>Meles meles</i> )
	Mole	( <i>Talpa europaea</i> )
From milk bottle or from pellets	- Bank Vole	( <i>Clethrionomys glareolus</i> )
	Field Vole	( <i>Microtus agrestis</i> )

E.F.

Trees and woodlands

The recording of woodlands covered the following points:

1. The identification of species of trees and shrubs using as an introductory guide book of reference 'Trees and Bushes' by H. Vedel and

J. Large, published by Methuen, and as a definitive guide 'Trees of Britain and Northern Europe' by Alan Mitchell, published by Collins. A list of species identified was produced and has been sent to the records secretary.

2. Aspects of woodlands, eg variety of ages of trees; regeneration; canopy cover; management; additional habitats within the wood, such as wet places, tree stumps, walls etc; ground flora etc, which are important to record in order to get a complete ecological picture.

P.B.

#### Excursion to Carron Glen - 7th May 1977 (Leader - Dr. M. Burge)

Twenty-two members reluctantly alighted at a cold, wet layby near Frankerton to explore Carron Glen under the leadership of Dr. Michael Burge.

Our first stop was at the river bank where Dr. Burge explained how certain plants were able to stabilise the alluvial sediments deposited along the banks during floods. Examples seen were Marsh Marigold (*Caltha palustris*), Golden Saxifrage (*Chrysosplenium oppositifolium*) and, further up the bank, Ramsons (*Allium ursinum*) and Sweet Cicely (*Myrrhis odorata*). Once these plants have created a stable soil, then other meadow and woodland species are able to colonise it, such as the following: Dog's Mercury (*Mercurialis perennis*), Wood Stitchwort (*Stellaria nemorum*), Wood Anemone (*Anemone nemorosum*), Water Avens (*Geum rivale*).

Alder (*Alnus glutinosa*) was present indicating a waterlogged soil and we were shown its root nodules which contain bacteria that can fix free atmospheric nitrogen, thus the tree is not dependent on soil nitrates. This association of bacteria and plant is called symbiosis. Nettles occurred hereabouts indicating that the soil was nitrogenous, possibly put in by the alders.

The party then crossed a bridge into a Sessile Oak (*Quercus petraea*) woodland. Here Dr. Burge explained the seasonal aspects of a deciduous woodland, eg most green plants require plenty of light and woodland herbaceous plants tend to flourish early in the season before the trees leaf out, giving what is termed a prevernal aspect to the community and occurring March/April depending on the weather. Later on the trees leaf out and the amount of light reaching the ground vegetation is greatly reduced, allowing certain shade-loving plants to flourish, giving a vernal aspect. At the time of our visit representatives of both prevernal and vernal aspects were present. Among the former were Lesser Celandine (*Ranunculus ficaria*), Dog's Mercury, Wood Anemone and Primroses (*Primula vulgaris*). Typical representatives of the vernal aspect seen were Bluebells (*Endymion non-scriptus*) which is a poor competitor on well-lit ground but finds its niche in the shade, Hedge Woundwort (*Stachys sylvatica*) and Sweet Woodruff (*Galium odoratum*).

The area of woodland was well-scoured by members despite pouring rain and a total of 55 flowering plants noted. An interesting moss seen was the Willow Moss (*Fontinalis antipyrenica*), probably the largest moss growing in Britain, up to one metre long. It grew attached to stones in the river and the specific name 'against fire' is said to refer to a former use of the plant as non-inflammable insulating material in the walls of houses in Lapland.

#### Reference:

J. Winham

Willis, A.J. (1972). *Introduction to Plant Ecology*.



Outing to St. Abbs and Coldingham - 14th May 1977

It was a pleasant journey down by the A1, skirting East Linton. Trees were the tender green seen for such a short time each spring; only the ash trees had not yet come to new life. South of Dunbar masses of Primroses (*Primula vulgaris*) were seen growing on the railway embankment and from the coach also two herons were seen flying towards the coast.

We were met at St. Abbs by our leader for the day, Mr. Rennie Weatherhead, who took us westward out of the village to the cliffs. This part of the coast has quite recently been acquired by the Scottish Wildlife Trust and is under its care. A warden, Mr. Evans, has been appointed and had commenced duty about a month previously. Later, on our way back to the village we met Mr. Evans and heard from him about some of the migrant birds he has already seen during his short period on the job.

On the near stack were thousands of birds - Fulmar, Great Black-backed Gull, Lesser Black-backed Gull, Herring Gull, Common Gull, Kittiwake, Razorbill and Guillemot (including bridled specimens). Eider were seen on the water. The cry of these sea birds on the cliff ledges joined with the crash of the surf breaking on the rocks and shore below, is a lonely, haunting sound.

The stop for our picnic lunch was at Burnmouth - a grassy sheltered cove where Cowslips (*Primula veris*) and Sea Campion (*Silene maritima*) grew on the rocks and cliffs above us. We were told that about 100 years ago small fishing boats did in fact use this little haven and that old anchors had been left to rust and lay buried underneath the shingle.

From here after lunch we continued westward bearing left to the freshwater loch and on the way were seen Stonechat, Skylark, Wheatear, Linnet, Meadow Pipit. A Willow Warbler was first heard and then seen on a bough by the lochside, while on the loch were two Tufted Duck, a Little Grebe, Coot and Moorhen. Swallows, too, were very active at the boathouse. Hundreds of Kittiwake were congregated at the west end of the loch, hovering and diving, with such screaming and calling.

Keeping to the right of the lighthouse keeper's walled garden we returned to the sea cliffs, and here we saw our first puffins of the day. Four had emerged from their burrows and were on ledges among the other sea birds. Gannets, too, flew low over the surface far out at sea.

Far below us the little fishing boat 'Sterine' throbbed along leaving a pale wash and with gulls flying astern like a tattered pennant. In the near distance was Fast Castle and, further off, North Berwick Law and the Bass Rock could be seen. One sad sight was the dark smoke blowing from the twin chimneys of the Portland Cement Factory at Barns Ness.

A list of wild flowers found in the glade has been given to the Records Secretary. Four different species of fungi were found and one wild field mushroom (*Agaricus campestris*). It was agreed that it was very early in the season to find the latter but this edible species is quite plentiful here. Many of last year's dead puff balls were seen.

On our return journey to the village at the small fir plantation where the cliff path emerges to the main road, we saw a flutter of gold-

finch, rising and falling after each passing car. They flew low around us and we heard distinctly their quick twitter.

Back at St. Abbs a small number of our party chose to walk along to Coldingham Sands while the others went off by coach to Edrom Nurseries about a mile out of the village. These Nurseries were established some years ago by two sisters of the Logan-Home family from Edrom in Berwickshire. Now it is cared for by Mr. Duguid who was their head gardener. A delightful time was spent by all in these lovely gardens where exotic plants from all over the world and humble well-known flowers grew together. Stone troughs containing plants had been placed at waist level for easier inspection.

Time moves on and we had to set off to join the others at Coldingham Sands. At the edge of the car park as we got out of the coach a White-throat sang from the top of a small tree. Crossing the sands eastward we came to a burn leading up to a wooded dene. Here there was much bird song and Swallows, House Martins, Pied Wagtails, more Goldfinch, Yellow Hammers and Reed Buntings were seen.

The Blackthorn (*Prunus spinosa*) and Gorse (*Ulex europaeus*) were in bloom on the slopes of the glade - producing a lovely blending of colour.

On our homeward journey to Edinburgh the rich soil of East Lothian was noted - long straight furrows with green shoots already showing. Here and there a partridge and a cock pheasant were seen.

A. Davidson

#### Weekend at Garth, Perthshire -

Friday evening 20th May - Monday 23rd May 1977

#### Saturday

On Saturday morning we were able to watch a Buzzard as we assembled at the Garth Youth Hostel before moving on to the Ben Lawers Visitor Centre.

Here we were met by Mrs. Pat Batty, the warden's wife, who told us how Ben Lawers had been bought by the National Trust for Scotland in 1950 because of its rare alpine plants which were under a lot of pressure from botanists, collectors and alpine gardeners. In 1975 it was declared a National Nature Reserve and it is now managed in close liaison with the Nature Conservancy Council.

After this introduction some members opted for a guided walk round the lower slopes with Mrs. Batty. An account of this through the eyes of an entomologist follows. Others, who were more energetic, set out for the summit. A botanist's report of their day is given on page 42.

#### The Ben Lawer's outing through the eyes of an entomologist

For an area of rough heather and grass the abundance of life was surprising. Barely 50 yards from the Centre we stopped to look at a narrow stony pool. In it we found around eight Palmate Newts. Quantities of *Velia caprai* (the water cricket) and *Gerris lacustris* (a pond skater) were skimming across the surface and water-boatmen were moving jerkily around the stones at the bottom.

We walked on for a little and then started to move upwards following the course of a fairly large stream. I spotted a large insect which I initially took to be a dragonfly, but it was too early in the season for this and its flight was very slow. I searched the spot where I saw it land but found nothing. I decided it must have been a large stonefly. I had not previously seen a stonefly with a wingspan exceeding two or three centimetres. Searching under stones in the streams we soon found its nymph. It was black on the upperside, grey underneath, and with a dense white pubescence along the sides. (This is an aid to respiration.) We took it out of the water and handed it around for everyone to see, by which time the hair along its sides was matted and it had become lethargic due to lack of oxygen.

We walked up the stream a little farther and I caught a specimen of a common black beetle, *Phosphuga atrata*, which preys on snails, liquefying their bodies with a chemical solvent before consuming them. Almost inevitably in such a habitat we soon turned up a specimen of the Green Tiger Beetle (*Cicindela campestris*), the larva of which lives in much the same way as an Ant Lion. It digs a pit in sandy soil into which slip various small insects. These are consumed by the larva at the bottom of the pit.

I caught a number of very pretty Caddis flies. These had their wings delicately chequered in brown and cream. They belonged to the family Philopotamidae and were probably *Philopotamus montanus*, a species that appears to be common in upland streams.

While we ate our lunch, one of the large stoneflies flew past me and I netted it. It was uniformly brownish but with a pale yellow stripe which traversed the head and thorax longitudinally. I have now identified it as *Dictyopterygella recta*.

Along with three other species, all of which are more abundant, this group of insects is commonly known as the Large Stoneflies. In 'An Angler's Entomology' by J.R. Harris (Collins New Naturalist's Series), some interesting details appear. "This fly shows a preference for waters of low temperature. It is found on high hill streams and on the stony floors of spring-fed and other cool-water lakes. The nymphs live under large-size stones and have been found in lakes in the north of England and Scotland, as well as in many upland streams. The wings of the male flies are so small that they are quite useless for flying."

The nymphs appear to take an unusually long time to develop - Harris states this period as lasting three years. The eggs do not hatch until three months after they are laid. The nymphs are primarily vegetarians but are partially carnivorous. The adults, however, cannot feed.

Also common was a small black sawfly, *Dolerus aeneus*, which feeds on Poa grass.

After descending, we rounded off a most interesting afternoon with a look around the Centre.

A.D. Liston

The Ben Lawer's outing through the eyes of a botanist

After the introduction some members left to follow the well-trodden path to the summit of Beinn Ghlas. This route has become so popular that erosion is now a serious problem as the rock is soft and breaks up easily. On the lower grassy slopes Field wood-rush (*Luzula campestris*) and the occasional Wood Anemone (*Anemone nemorosa*) were flowering and Deer Grass (*Trichophorum cespitosum*) - the name has been changed recently from *Scirpus cespitosus* - was just beginning to show. Further up the hillside on barer ground young Clubmosses (*Lycopodium alpinum*, *L. clavatum*, *L. selago*) were starting to be recognisable as were the small leaves of Alpine Lady's Mantle (*Alchemilla alpina*). As we approached the snow we were able to watch a Ptarmigan and we disturbed a Mountain Hare which still had remnants of its white winter coat. The season was unusually late and there was still a lot of snow, though it was melting rapidly in the unexpected heat wave. Some members went along the ridge to the summit of Ben Lawers but those who remained on Beinn Ghlas also enjoyed superb views, saw a distant herd of Red Deer and found patches of Purple Saxifrage (*Saxifraga oppositifolia*) in full flower. Descending by the valley below the ski-hut more Purple Saxifrage and the leaves of such species as Yellow Mountain Saxifrage (*S. aizoides*) and Butterwort (*Pinguicula vulgaris*) were seen in the mineral-rich wet flushes. As we neared the Centre we stopped to watch Meadow Pipit and Wheatear, two species of birds characteristic of the open hillside.

E.H. Jackson

Sunday

On Sunday we were led up Glen Lyon by members of Perth Society of Natural Science. We foregathered at Fortingall, which gave everyone a chance to look at the famous 2000-year old Yew tree and the church. Fortingall's unusual thatched cottages (Architectural Review, August 1973), built c1889 for farm labourers on the Glen Lyon estate, were commissioned by Sir Donald Currie of Glen Lyon from Stirling-born architect James Maclaren (1843-90), as were the Tenant Farmer's House and Farm Steading, work on the Garth estate which Sir Donald had bought in 1880, Aberfeldy Town Hall (1889) and the buildings in London. Maclaren's Perthshire buildings were intended to be modern in design yet to blend in with the traditional local architecture. His work was important and influenced the better-known Charles Rennie Mackintosh. After his death his close associates, Dunn and Watson, formed a partnership and continued the work for Sir Donald Currie which included the building of the present Glen Lyon House itself, and Fortingall Hotel, both of which show his influence.

Our first stop in Glen Lyon was at Chesthill. Bitter Vetch (*Lathyrus montanus*) was flowering in the grassy riverside car park and Bird Cherry (*Prunus padus*) was in full bloom nearby. We crossed the river and were shown small patches of the deceptively moss-like Scottish Filmy Fern (*Hymenophyllum wilsonii*) on damp rocks by the bridge. A wet hollow was carpeted with Bog Violets (*Viola palustris*), easy to distinguish with their pale rounded flowers and rounded leaves. The thinly wooded, boulder-covered slopes above us were a mass of spring flowers and young ferns. We had lunch by the Roman bridge where Mountain Sorrel (*Oxyria digyna*) was flowering on a rock in midstream.

In the afternoon a small group of us followed the burn up its steep, rocky, moss-covered gorge. Green Spleenwort (*Asplenium viride*), Wood Melick (*Melica uniflora*), Eared Sallow (*Salix aurita*) and the leaves of Lesser Twayblade (*Listera cordata*) were of special interest, and we got a good view of the Cuckoo which had been calling all afternoon.

E.H. Jackson

Reference:

*Architectural Review*, August 1973.

Outing to Grey Mare's Tail and Dobb's Linn - 5th June 1977

Thirty-six members of the ENHS were joined by 24 members of Melrose Support Group of the Scottish Wildlife Trust.

In the morning a special search was made by the path side on the upper part of the climb to Loch Skene for Yellow Saxifrage (*Saxifraga aizoides*) where a small piece had been seen on the last visit by the society in June 1973 (see 1973 Journal, page 32, and 1975 Journal, page 18). There was no sign of it. Starry Saxifrage (*S. stellaris*) and Mossy Saxifrage (*S. hypnoides*) were in flower but the flowers of Purple Saxifrage (*S. oppositifolia*) were over. On the rock ledges by the fall there were spikes of Early Purple Orchid (*Orchis mascula*) and Globeflower (*Trollius europaeus*). In the gully near the fall were seen flowers of Mountain Sorrel (*Oxyria digyna*) and much foliage of Lesser Meadow-rue (*Thalictrum minus*). Lesser Clubmoss (*Selaginella selaginoides*) and the fern Green Spleenwort (*Asplenium viride*) were also found.

After lunch, some of the party went to Loch Skene where Cloudberry (*Rubus chamaemorus*) was in flower. Others visited Dobb's Linn in search of graptolites of which several species were seen. Here two attractive mosses with capsules were collected, *Bartramia pomiformis* (Apple Moss) and *Philonotis fontans*. Brittle Bladder Fern (*Cystopteris fragilis*) was seen.

Everywhere, particularly on screes, Parsley Fern (*Cryptogramma crispa*) was sprouting luxuriantly and New Zealand Willowherb (*Epilobium nerterioides*) had reached the most inaccessible ravines.

Some entomological notes

David Ellis, SWT member, exhibited moths caught the previous night in his light trap including the Scorched Wing, and Andrew Buckham showed a live *Rhyssa persuasoria*, the largest British Ichneumon fly, which parasitises the larva of Greater Horntail or Wood Wasp (*Urocercus gigas*). Mother Shipton Moths, the buzzing moths, (*Eucridimera mi*) were flying.

A.J. Smith

Outing to Polton Woods - 8th June 1977

About a dozen people met at Loanhead traffic lights at 6.30 pm and from there walked to Polton Woods. Hardly had the first stone or piece of rubbish been turned in search of Molluscs, the subject for the evening, when the heavens opened. The evening was spent getting soaked in the most torrential rain, slithering with alarm and amusement in the mud, grubbing

under trees in the semi-darkness for minute and well-camouflaged creatures. Beneath the top layer of dead leaves, logs, bark etc, the ground was still extremely dry and very few traces of slugs and snails, such as slime trails never mind the animals themselves, were detected. Even if the weather had been fit for human beings I feel that we may well have found very little, the sequence of meteorological events, last summer's drought, the long cold spring, and more drought, when eggs should be hatching and molluscs feeding, have been very adverse. The survivors were still carefully buried in safer depths in the soil.

Species found:

*Lymnaea peregra* (Müller 1774) Wandering Snail (found in the Bilston burn)  
*Laura cylindracea* (da Costa 1778) Chrysalis Snail  
*Clausilia bidentata* (Ström 1765) Two-toothed Door Snail  
*Discus rotundatus* (Müller 1774) Round Snail  
*Oxychilus alliarius* (Miller 1822) Garlic Snail  
*Aegopinella nitdula* (Draparnaud 1805) Smooth Glass Snail  
*Cepaea hortensis* (Müller 1774) White-lipped Snail  
*Arion subfuscus* (Draparnaud 1805) Dusky Slug  
*Arion hortensis* (Ferussac 1819) Garden Slug  
*Deroceras (Agriolimax) reticulatum* (Müller 1774) Netted Grey Slug

S. Smith  
 Royal Scottish Museum

Visit to Roslin - 27th July 1977

Throughout recent years members have had many outings - formal and informal - to Roslin to study the Natural History of the Glen, so it was particularly interesting to spend an evening hearing about the historical background of the area.

A short account follows:

The Society visited Roslin at the invitation of Mr. G.R. Campbell who gave us a general outline of the local history of the village and district.

We heard that at one time it was a place of high population being third in number after Edinburgh and Haddington. It was made into a Burgh in 1456 by James II. With the Market Cross, a Saturday Market, and Annual Fair, it became a great attraction after Sir Walter Scott's 'The Lay of the Last Minstrel' was published.

We saw the ruins of the old castle, then were shown round Roslin Chapel by the Curator, Mr. Taylor. He pointed out the famous Apprentice Pillar and the numerous biblical scenes depicted in stone that adorn the walls. The original owners of this Chapel were the Knights of St. Clair, many of whom are buried in their armour beneath the floor.

We walked to the Powder Mill which lies in this lovely Glen. Gunpowder for the Napoleonic War is reputed to have been produced by this mill, which ceased to operate in 1954. The old works are seen around the area of the mill having been sited there to avoid accidents.

Midlothian County Council have plans to re-open the Glen as a country park, leaving the old works as historic relics.

Having visited Roslin and its surrounds we can appreciate why people, such as Dorothy Wordsworth and Sir Walter Scott, were inspired to write about it.

To round off a lovely summer evening, the Roslin Residents Association invited us into their Church Hall where we enjoyed a refreshing cup of tea.

N. Fisher

#### Outing to the Bathgate Hills - 3rd August 1977

Before starting out on the field trip, the leader, Mr. S. Munro (Institute of Geological Sciences), gave a brief account of the geology of the Bathgate Hills and surrounding district. The relationship between geology and landscape and man's utilisation of local mineral resources was also discussed. The following is a short account of this excursion.

Meeting at Cairnpapple Hill, the party made its way to the summit of the rocky hill known as The Knock. The view from The Knock is amongst the finest in the Lothians, providing as it does an advantageous point from which to observe the geological setting of the district. The Bathgate Hills are made up of sediments interbedded with lava flows and tuffs belonging in time to the Carboniferous Period. Into these beds have been intruded numerous dykes and sills of volcanic origin. Due to the relative hardness of the volcanic rocks and the protection afforded by them to the sediments, the rocks of the Bathgate Hills have resisted the forces of erosion. Included amongst the sediments are some highly fossiliferous limestones with associated mineral veins which were at one time worked commercially.

To the east of the Bathgate Hills is the low lying oil shale country characterised by numerous flat topped 'bings' of spoilt shale left by the now defunct oil shale industry which during a century of commercial life, produced large quantities of oils and associated by-products. Westwards lies the once busy mining area of the Lanarkshire coalfield with its more angular topped waste 'bings'. On the evening of our visit, clear visibility enabled our party to obtain a view of the distant mountain peaks on the island of Arran. Over to the north the steaming oil distillation towers at Grangemouth could be seen processing the new-found wealth from beneath the North Sea. The modern oil industry had its origins in the West Lothian oil shale industry with James (Paraffin) Young's original oil distillation processes.

As we descended The Knock we observed in a small road-stone quarry, a dolerite dyke cutting through the basalt lava flow which outcrops at this point. A short distance away, we visited a disused quarry excavated in the Petershill Limestone. This highly fossiliferous limestone contains swarms of corals, including Clisiophylum, Palaeosmilia and Aulophyllum, beautifully preserved and associated with colonies of Lithostrotion, Lonsdaleia and numbers of small brachiopods and Gigantoproductus. Not far off, at another quarry, at the base of the limestone beds, we observed a ripple-marked sandstone which contains trace fossils produced by burrowing organisms which lived in the sand when it formed the bed of some semi-tropical sea.

The party next visited the nearby Hilderstone Silver Mine which is situated in a mining hollow in Cairnpapple Hill. Last worked in the year 1898 it has never produced silver in any appreciable quantity since it was first mined early in the 17th century. In the early days of its productive life, the mine was 'nationalised' by King James VI who quickly realising its low yield smartly disposed of it to 'private enterprise', which did not appear to have been any more successful at this venture than its sovereign. The main veinstone is the mineral barytes and in addition to silver quantities of nickel and lead have been extracted. Part of the workings can still be visited in relative safety and our party brought the excursion to a conclusion by bending double and scrambling through the small cave-like entrance of the mine. Our members were not greeted, as I am sure they had secretly hoped, by specks of silver twinkling in their torchlight but with a long low dripping wet gallery, the muddy floor of which after a short distance gradually dipped down into the flooded working levels below.

Back in the relatively bright light of an August evening our mud-stained party joined together in thanking our leader for an interesting and stimulating excursion.

G. Bell

#### Entomological outing to Portmore - 13th August 1977

A small number of enthusiasts turned out, and a much greater number of moths which kept us busy around the light lit from a portable generator in the old drive near Portmore Lodge until 1 am. A total of 79 species was recorded by this time. We then examined the contents of a battery-operated trap which had been placed in the birch wood near Portmore Loch by Dr. Keith Bland. This also had a good catch and included five species not seen at the generator-powered light.

The most interesting resident species seen were the Dotted Carpet Moth (*Alcis jubata*) and the Green Arches (*Anaplectoides prasina*), both very local in south-east Scotland. Most unexpected were two very fine Great Brocades (*Eurois occulta*): although the species is resident in the Scottish Highlands (moths appearing there in July) these individuals belonged to the continental race from which occasional immigrants arrive in August. I was even surprised to find two others in my trap at home in West Lothian the following morning, which suggested that a very large immigration of this species must have taken place.

Most abundant of the more common species at the light was the Antler Moth (*Cerapteryx graminis*). This is sometimes a pest of hill pastures in the larval stage and seems to be unusually abundant this summer.

E.C. Pelham-Clinton



Outing to Kincaig Cliffs and Shell Bay - 27th August 1977Leader - Lt-Cdr E.F.B. Spragge (with Dundee Naturalists' Society)Some extracts from the report:

Kincaig cliffs are where the fulmer first nested in Fife in 1926.

Botanically the most interesting plant was Duke of Argyll's Tea-plant. (Note: *Lycium* sp - probably *L. chinense* and not *L. barbarum*). Both *L. barbarum* and *L. chinense* are introduced and naturalised in hedges and waste ground. *L. chinense* is commoner near the sea than *L. barbarum*. It is less spiny. Can any member who was on the outing confirm the identification?

One item found by a Dundee member was a living coral Dead Men's Fingers (*Alcyonium digitatum*) which created a great deal of interest. (Note: *A. digitatum* is a colonial animal consisting of a tough mass, usually flesh-coloured without an external skeleton but internally stiffened with limy spikes. Under water minute colourless polyps - organisms similar to very, very small sea anemones - each with eight feathery tentacles emerge all over the surface.)

Lt-Cdr Spragge spoke about the geological history of this part of the Fife coastal region, pointing out that there were remnants in many places showing that volcanoes were active some 100 million years ago. Larval layers were clearly seen on the cliff faces and at one point a basalt rock formation had a very definite 'Fingal's Cave' formation. Large wave-cut horizontal platforms of rock at high tide level were observed and their formation explained by the leader.

H.S. Hughes

Outing to Reddie Hill Deer Farm (near Auchtermuchty, Fife)10th September 1977

Dr. J. Fletcher acquired Reddie Hill Farm three years ago. It is a small farm of 34 hectares (84 acres) lying about two miles from Auchtermuchty.

Dr. Fletcher took us into the fields where we saw deer at very close quarters, the majority being moderately tame. In order to stock the farm, beasts had to be transported from Rhum and from Sutherland, a difficult and time-consuming exercise for which the deer needed to be anaesthetised before the loading of boats and lorries could be carried out.

Under farm conditions, deer which have become tame make for greater ease of handling, are easier to inspect for injury and disease, and treatment, such as injections, can be given without difficulty. Nevertheless, the land is carrying a higher density of animals than under natural conditions which increases the likelihood of infestation with internal parasites.

Only a few animals from the farm are being sold live, but this market may increase in the future if deer farming becomes more widespread, which is unlikely so long as the deer farmer cannot qualify for grants as at present.

It was a cool day with grey skies and intermittent rain. When rain became more persistent, we were shown the newly erected buildings on the

farm for use in handling carcasses. Our host then answered a steady and lengthy stream of questions which we hoped showed how interesting we had found the tour of the farm.

In the afternoon, the rain having stopped, members went for a circular walk through attractively laid out conifer plantations. Birds were sparse but fungi were plentiful.

E. Farquharson

#### Introduction to Mycology - 2nd October 1977

On Sunday 2nd October, Dr. Roy Watling took members of the Society on a fungus foray outing - not the customary foray of previous years, but an 'Introduction to Fungi'.

On this occasion a relatively short circular route was taken, starting at Canonmills and finishing at the Royal Botanic Garden, passing first through rough wasteland, then along a stretch of disused railway line, finally walking through Warriston Cemetery with its tended grass and long established trees.

In this short distance Dr. Watling pointed out the varied habitats we were walking through - grassland, pathways, burnt ground, young birch plantation, a few conifers and old full-grown deciduous trees, each habitat supporting different fungi. While some might be found in several of the habitats, others were strictly limited and were specific to particular trees.

We were encouraged to make a habit of smelling fungi as an aid to identification, often saving much time working through identification keys. In particular, specimens of *Hebeloma* smelling of radishes and of *Mycena alcalina* smelling of bleach illustrated this point. When given the Latin names of fungi, the meaning was explained (eg *Coprinus lagopus*, *Coprinus micaceus*, *Bovista plumbea*, *Laccaria laccata*), thus immediately making the names more interesting and easier to remember.

The collected specimens were taken back to the Royal Botanic Garden, sorted, laid out in groups and labelled. We were able to look at these specimens in greater detail than we had done in the field and compare them with the illustrations and descriptions in the large number of reference books that had been laid out for us - alas, quite a few in foreign languages.

Practical advice was given on how to collect fungi and how to transport them home without damage, wrapping them in waxed paper which would keep them fresh until the next day. The importance of examining spores for colour, size, shape and ornamentation as a necessity for accurate identification was stressed and we were shown differing examples under the microscopes.

As an introduction to mycology, the afternoon was most enjoyable and helpful as well as being stimulating. It finished on a higher plane when Dr. Watling kindly showed us some of the sophisticated equipment, from drying cabinets to electron microscopes, now being used in his laboratory.

E. Farquharson

## THE CONSERVATION OF WILD CREATURES AND WILD PLANTS ACT 1975

It is now an offence for anyone who is not an authorised person (an authorised person is the owner or occupier of the land or anyone given permission by the owner or occupier) to uproot or destroy wild plants.

Under the Act the following plants and animals have special protection:

Greater Horse-shoe Bat	Blue Heath	Monkey Orchid
Mouse-eared Bat	Cheddar Pink	Oblong Woodsia
Sand Lizard	Diapensia	Red Helleborine
Smooth Snake	Drooping Saxifrage	Snowdon Lily
Natterjack Toad	Ghost Orchid	Spiked Speedwell
Large Blue Butterfly	Killarney Fern	Spring Gentian
Alpine Gentian	Lady's Slipper	Teesdale Sandwort
Alpine Sow-thistle	Mezereon	Tufted Saxifrage
Alpine Woodsia	Military Orchid	Wild Gladiolus

Except under certain circumstances no one legally may pick, uproot or destroy, or take the smallest fragment of the 21 plants listed and no one may kill, take or injure any of the six wild creatures on the list. In January 1978 the Otter was added to the list as it applies in England and Wales. As yet it is not protected in Scotland.

An example of an exceptional circumstance in which a wild plant legally be destroyed might be an operation carried out in accordance with good forestry practice, which could not reasonably have been avoided.

The law does not stop people digging up weeds in their garden when they are the owner or tenant or for gathering, for example, brambles as this would not be uprooting.

Adapted from *Habitat*  
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